A32708

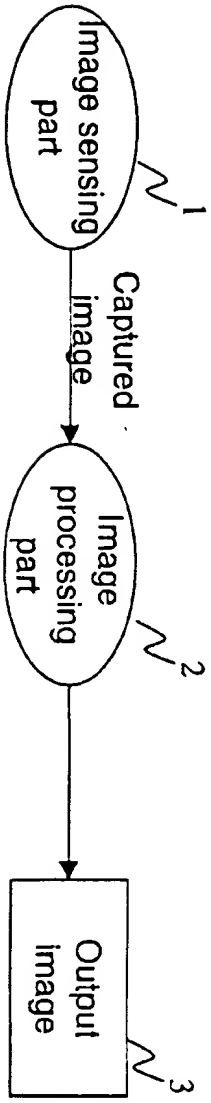
Image sensing part
1
Captured image
Image processing part
2
Output image
3
100

FIG. 1

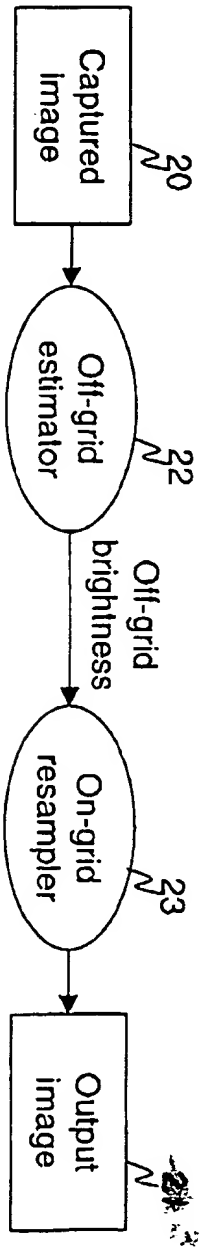
Captured Image
20
Off-grid estimator
22
Off-grid brightness
On-grid resampler
23
Output image
200

FIG. 2

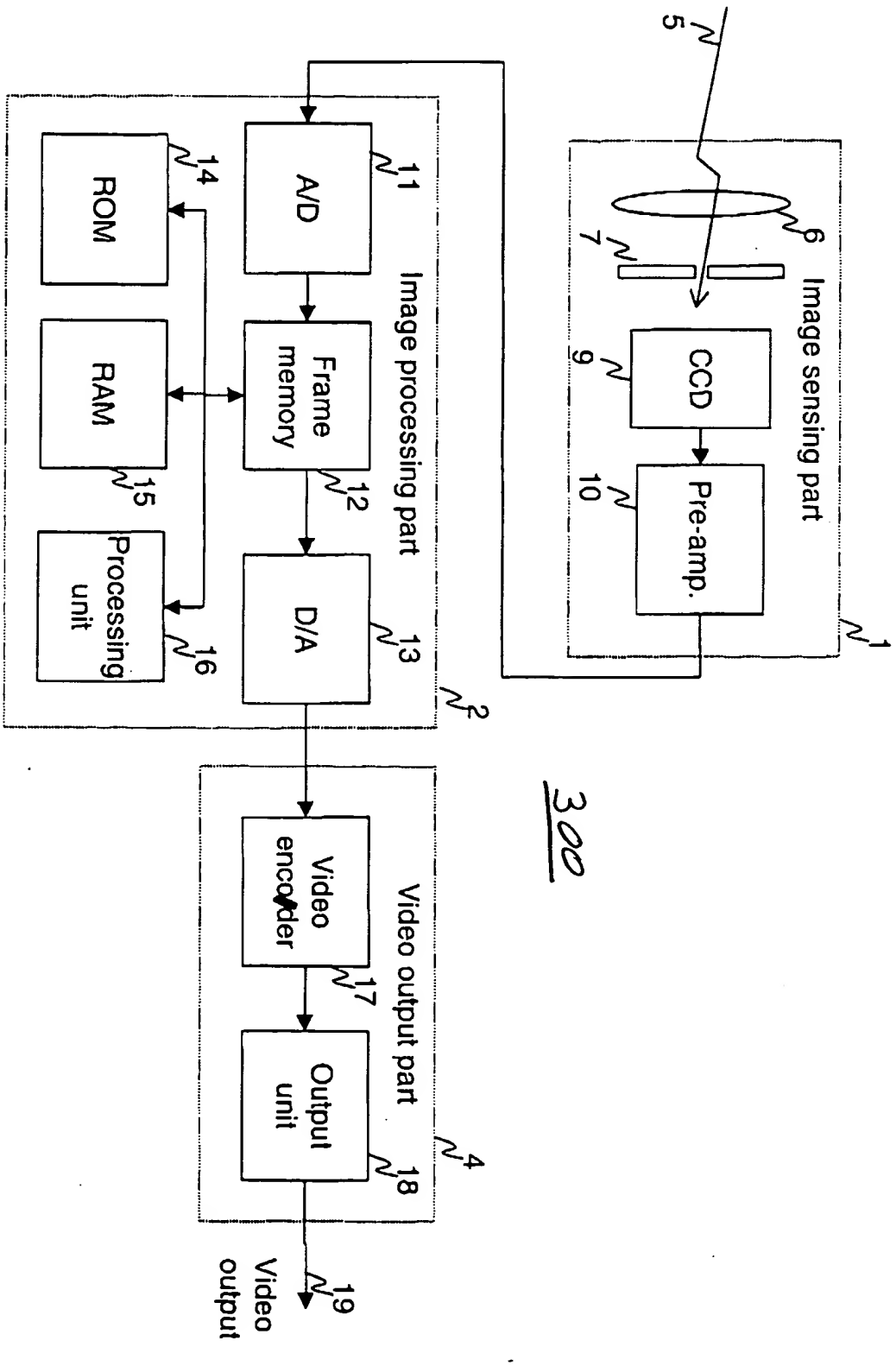
5
6
7
Image sensing part
CCD
9
Pre-amp.
10
1
300
A/D
11
ROM
14
RAM
15
Frame memory
12
Processing unit
16
D/A
13
Image processing part
2
Video encoder
17
Output unit
18
Video output part
4
Video output
19

FIG.3

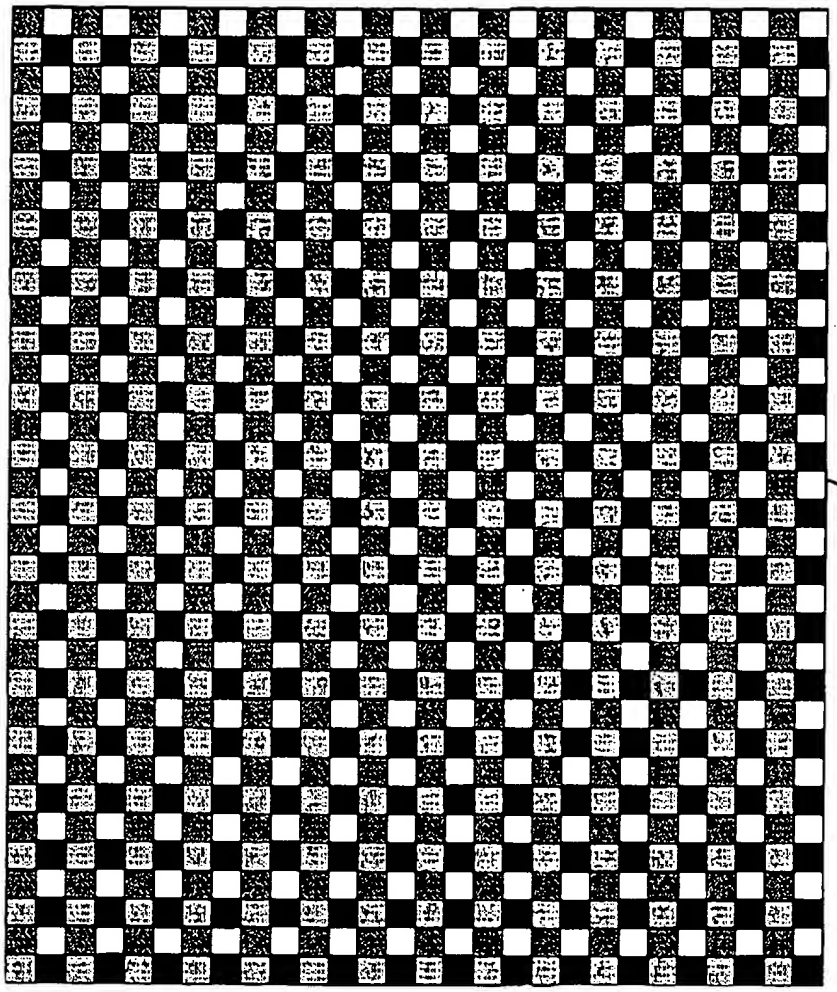

FIG. 4

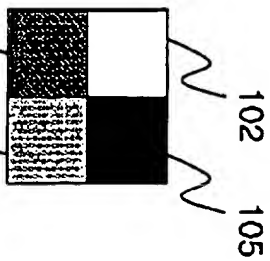

FIG. 5

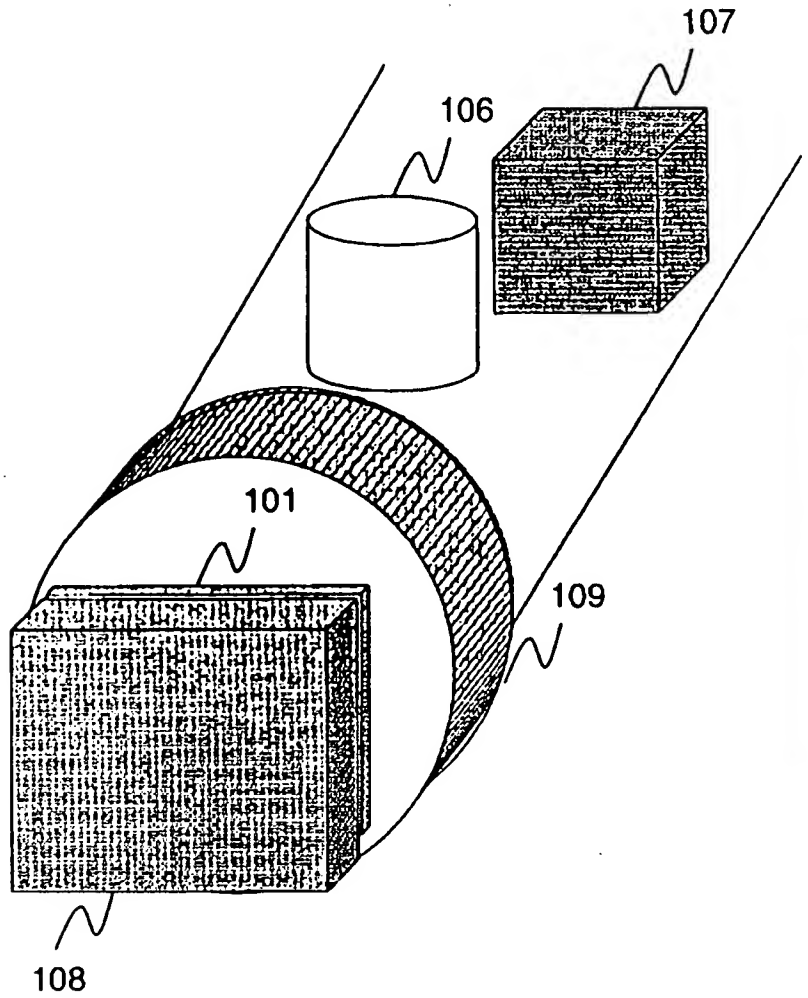

FIG. 6

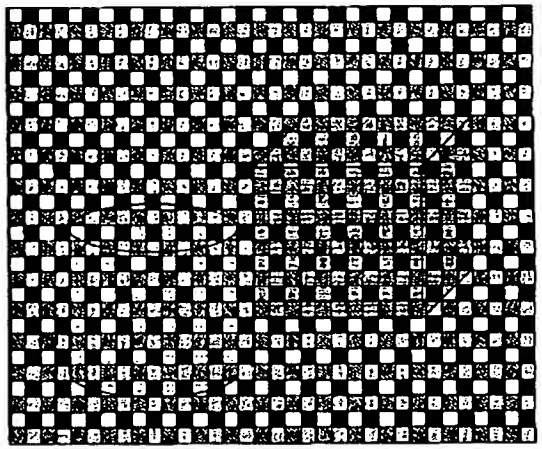

FIG. 7

09541469.022300

:0354486606 # 37
99-10-29 4:49 :(株)ソニー特許部
0354486806 PAGE.37
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09511469 .022300

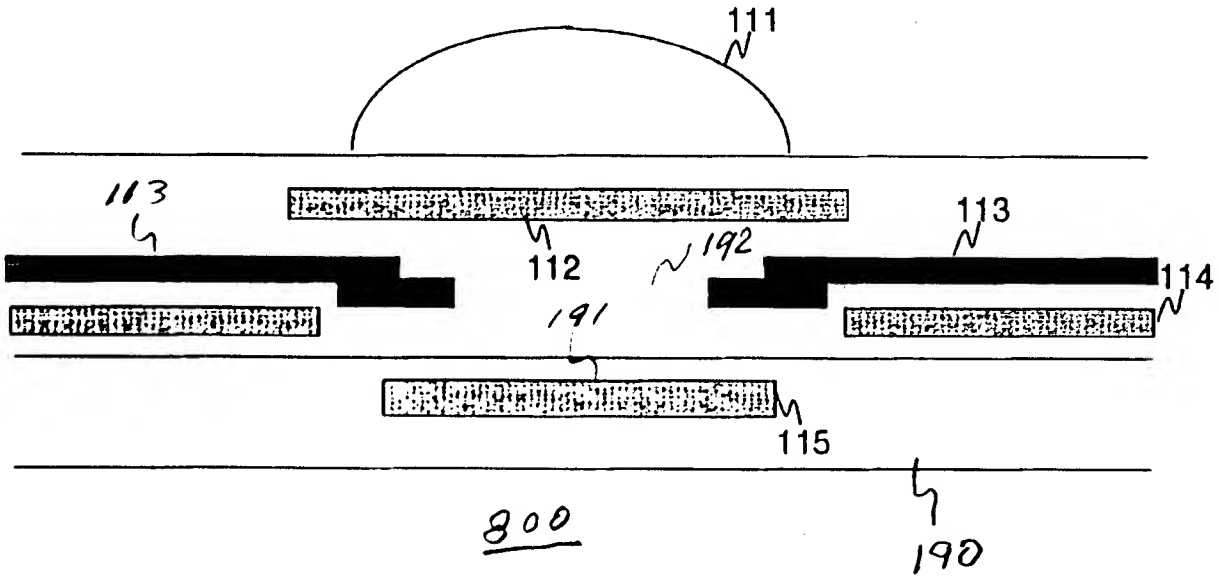

FIG. ~~1B~~ 8

:03544866E06 # 38
99-10-29: 4:49 : (株)ソニー特許部
0354486806 PAGE.38
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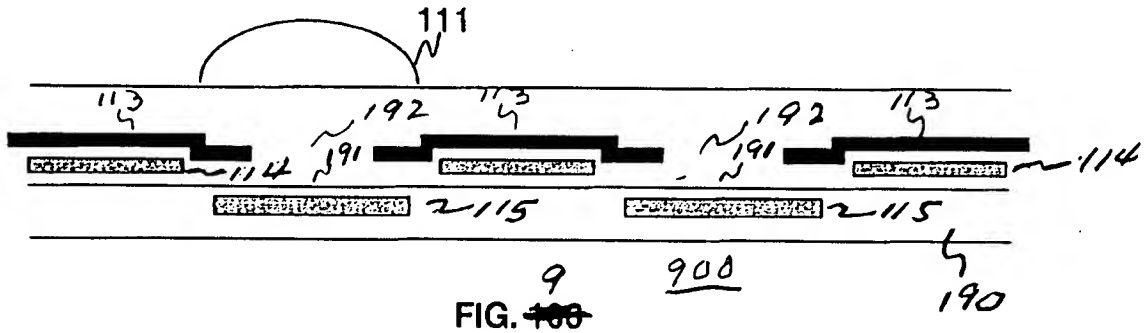


FIG. ~~100~~ 9

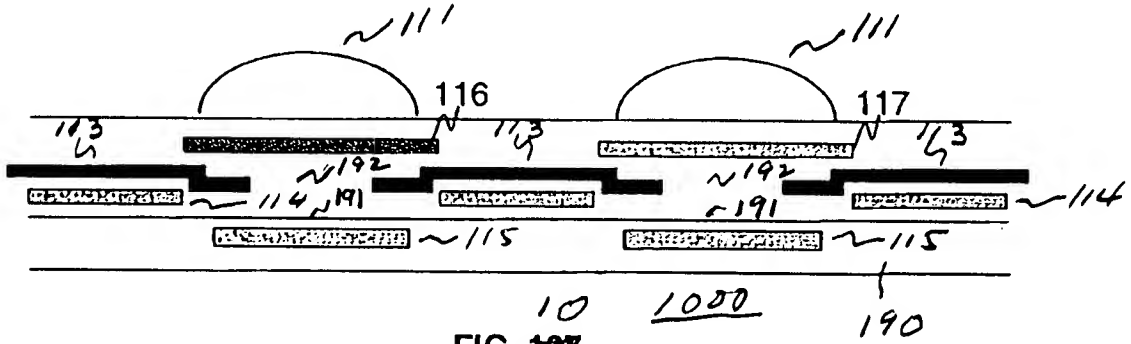


FIG. ~~107~~ 10

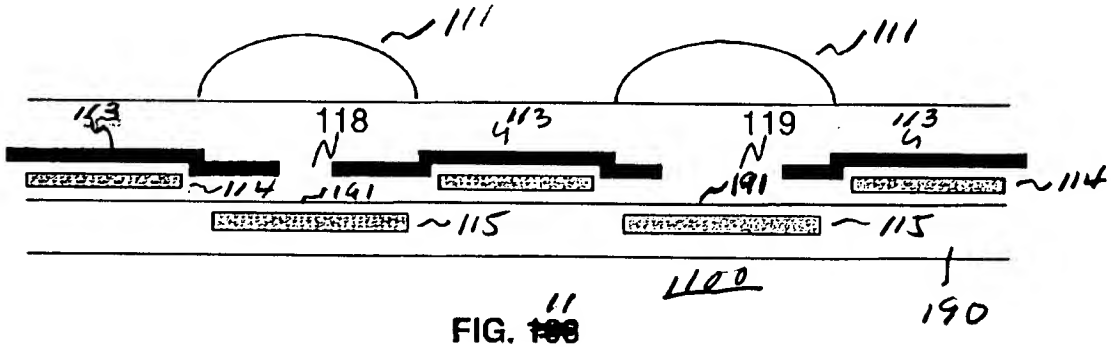
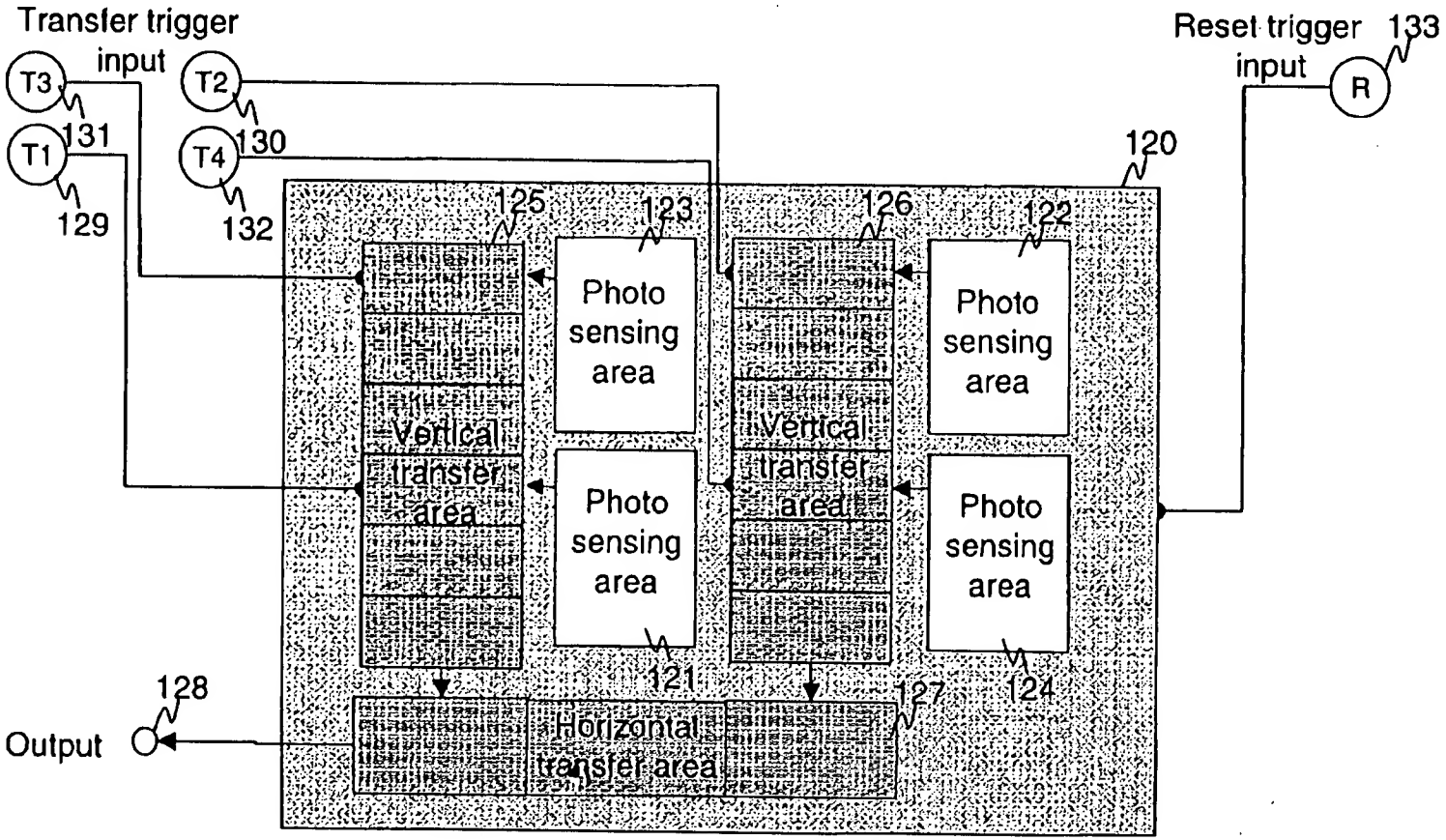


FIG. ~~108~~ 11



12

FIG.

0354486606 PAGE.39
OCT 29 1999 02:02
99-10-28 14:49 (株)ソニー不動産
0354486606

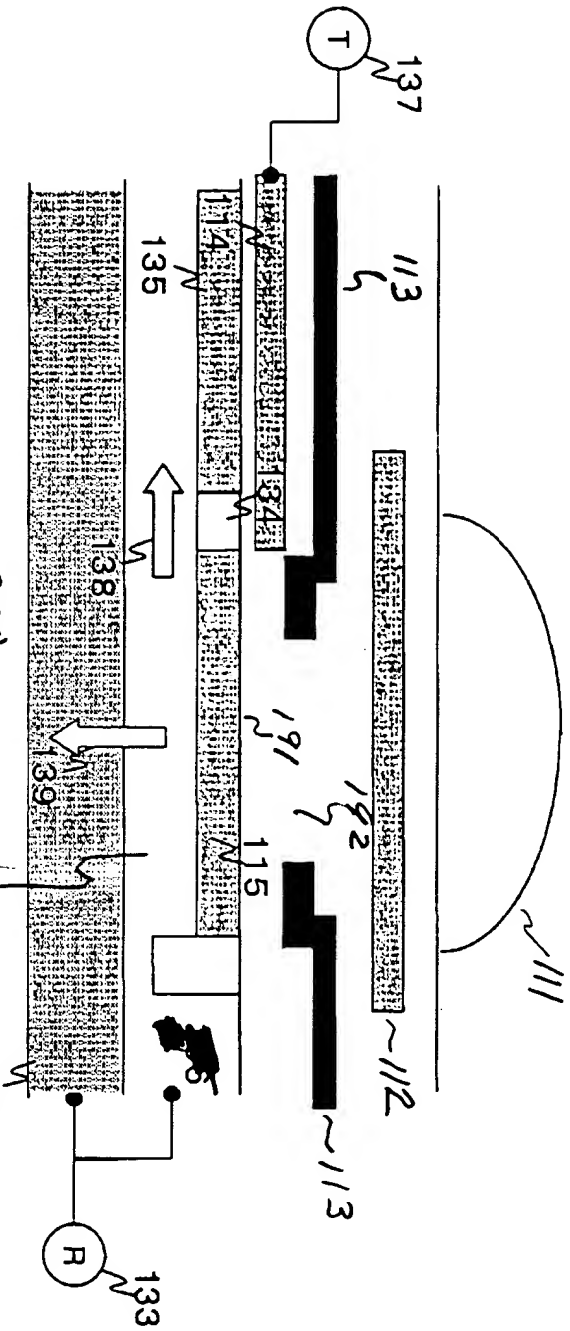
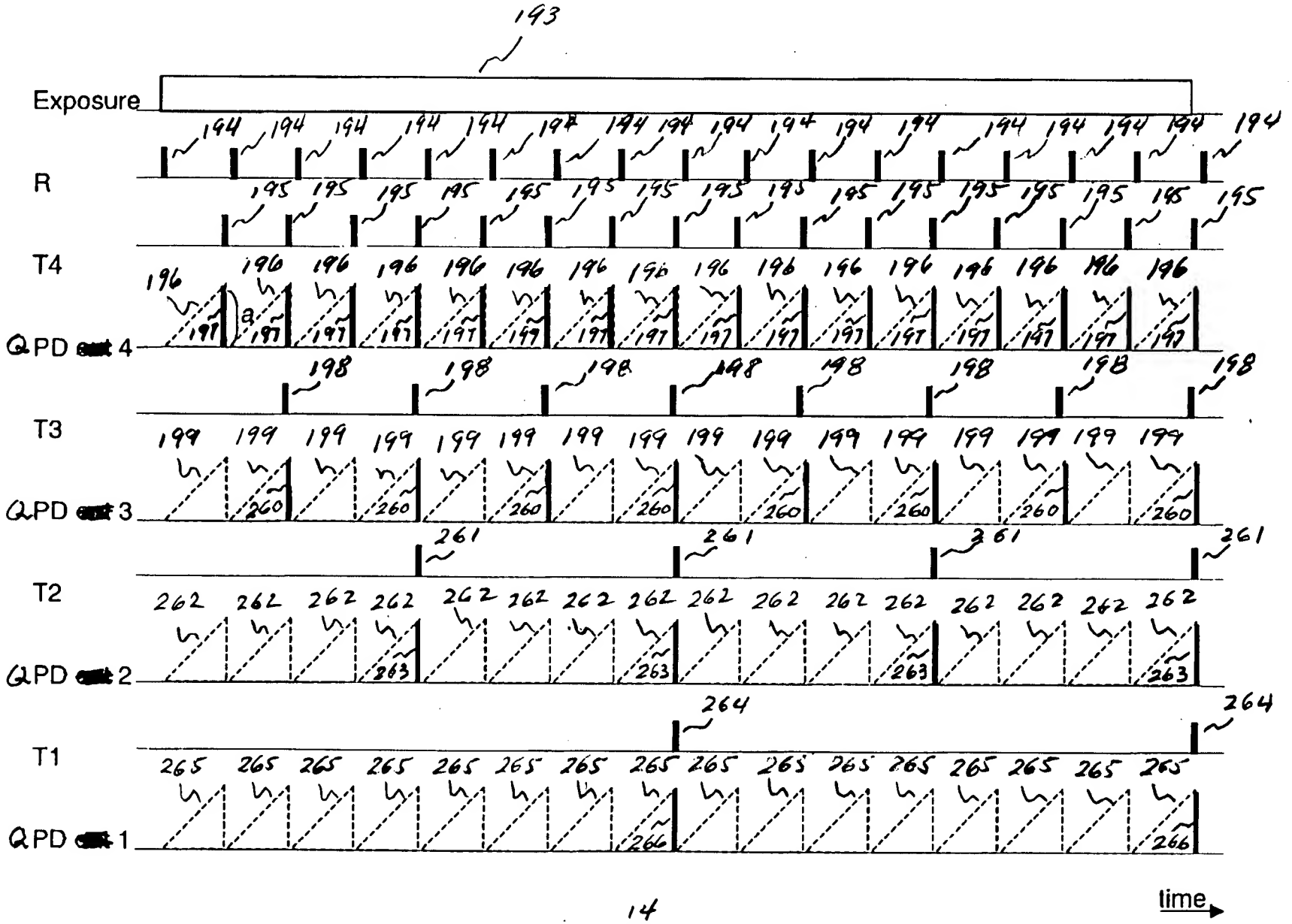

T
137
113
135
134
138
1300
191
192
115
111
112
113
139
190
120
R
133

FIG. 13



14

FIG.

09611469 , 022300

99-10-29 14:49 : (株)ソニー特許部所 # 41 :0354486806
0354486806 PAGE.41
OCT 29 1999 02:03

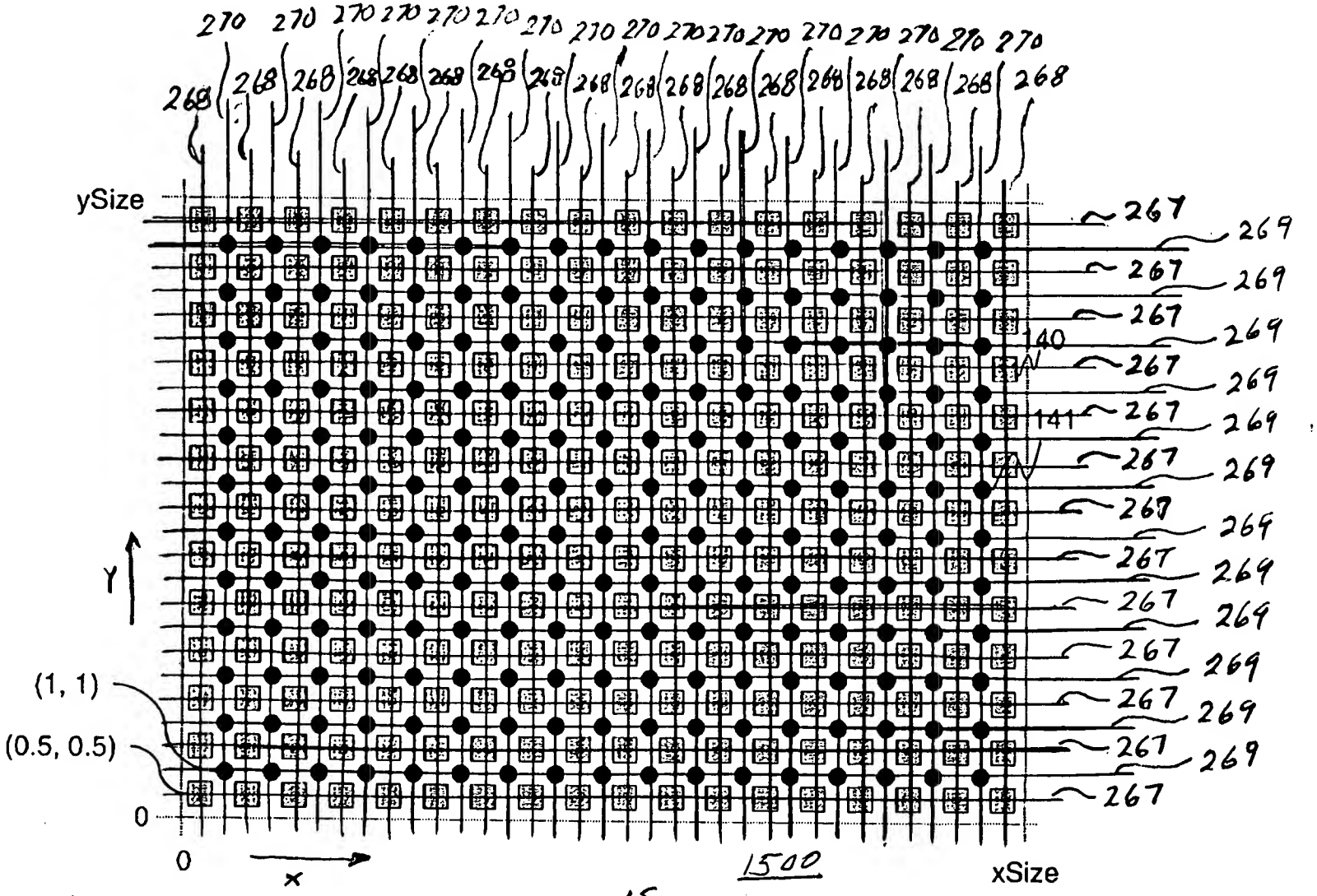


FIG. 15

99-10-29; 4:45 ; (株)ソニー知財所
:0354486806 # 42
0354486806 PAGE.42
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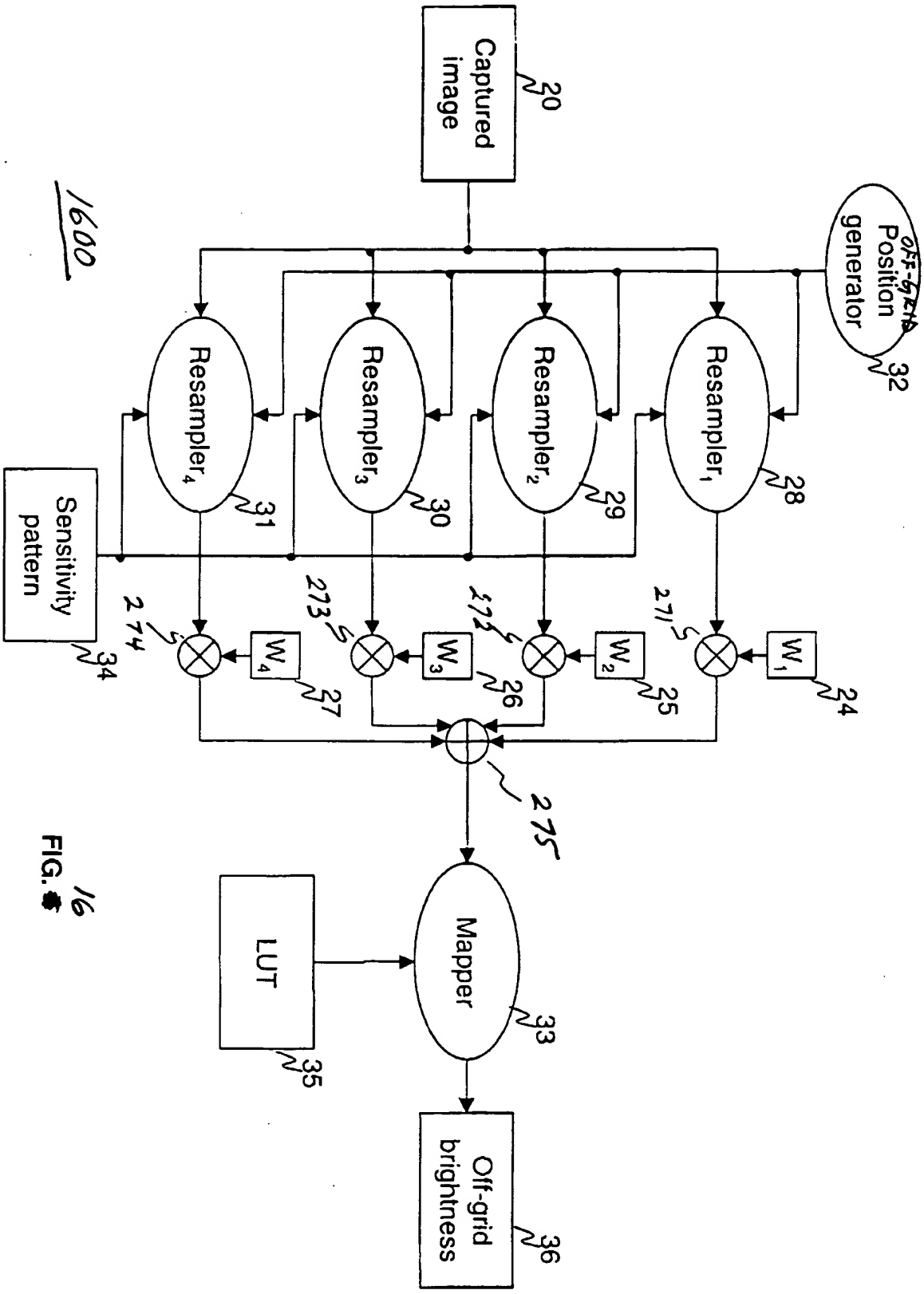
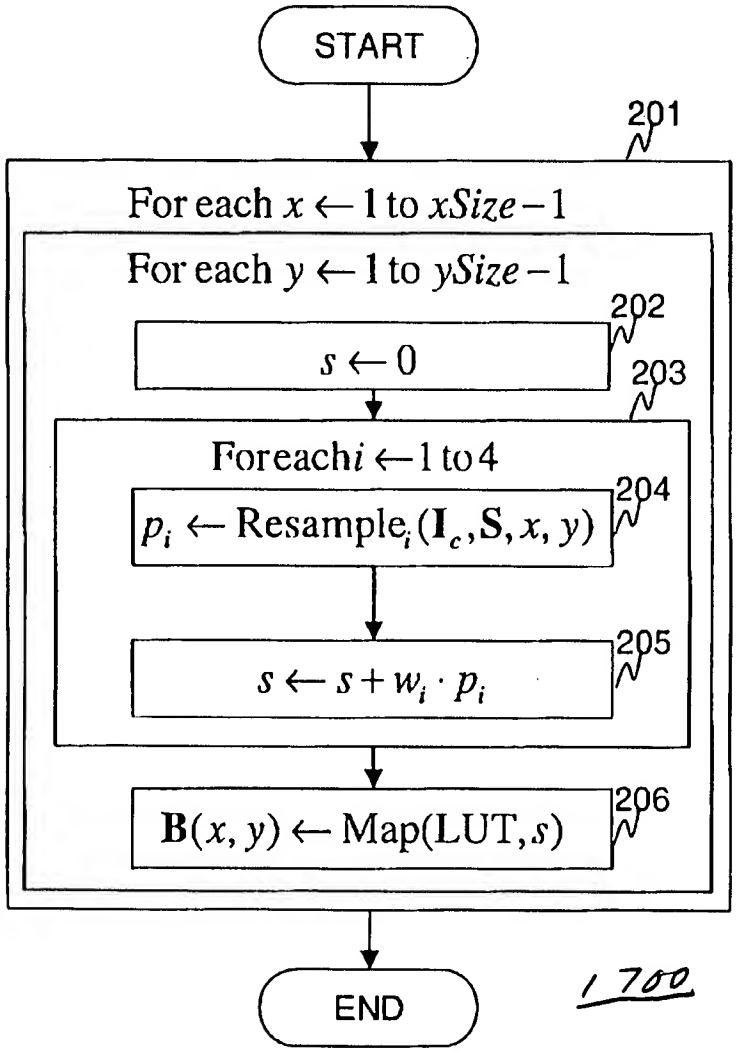

1600
Captured image
20
Off-grid Position generator
32
Resampler1
28
Resampler2
29
Resampler3
30
Resampler4
31
Sensitivity pattern
34
W1
24
W2
25
W3
26
W4
27
271
272
273
274
275
Mapper
33
LUT
35
Off-grid brightness
36

FIG. 16



17

FIG. [redacted]

:0354486806 # 44
99-10-29: 4:49 :(株)ソニー特許部所
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09614469 .022300

99-10-29 14:49 : (株)ソニー知財研究所 # 45
:0354486606
0354486806 PAGE.45
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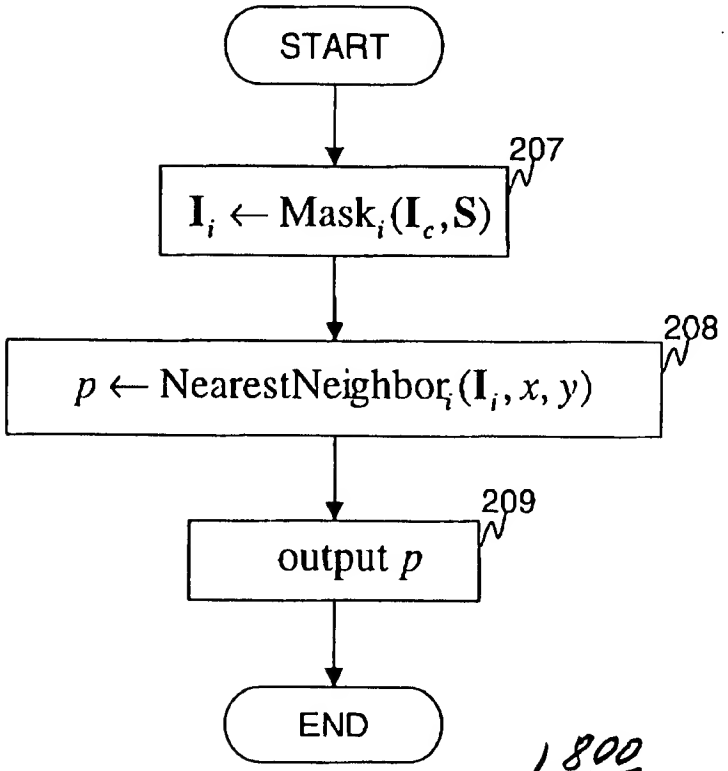

18
FIG. ~~202~~

09514469_022300

99-10-29 14:45 ;(株)ソニー本厚木所 :0354486806 # 46
0354486806 PAGE.46
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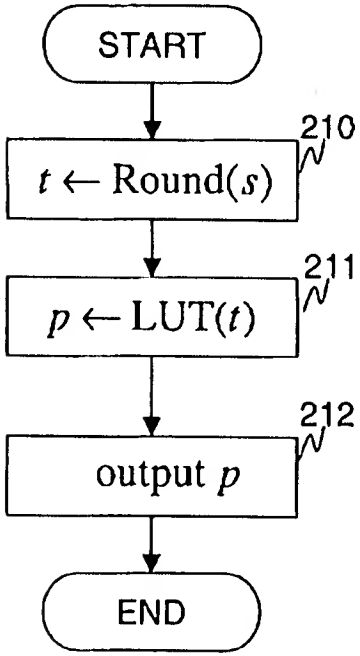
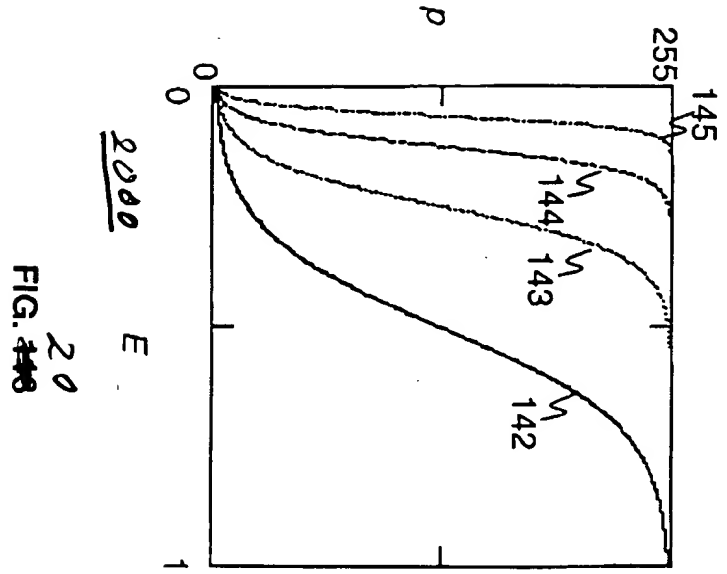


19

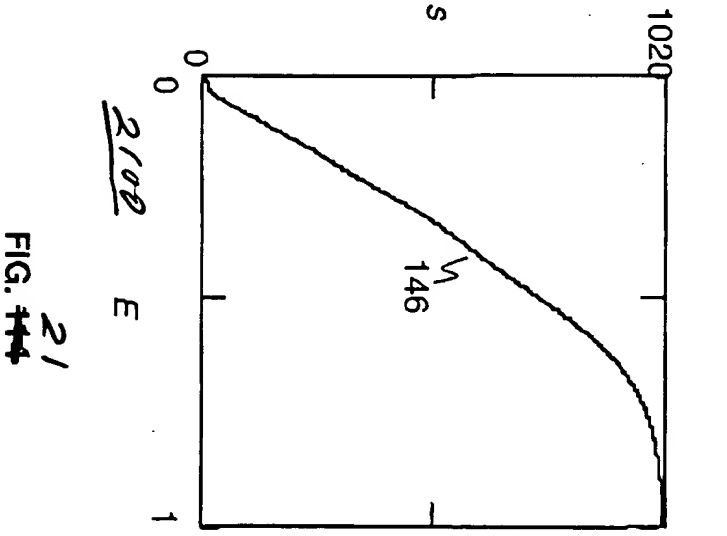
FIG. ~~200~~

09514469 .082304



2000

FIG. 20



2100

FIG. 21

99-10-29; 4:49 ; (株)ソニー特許所 ; # 48 ; 0354486806 ; PAGE. 48
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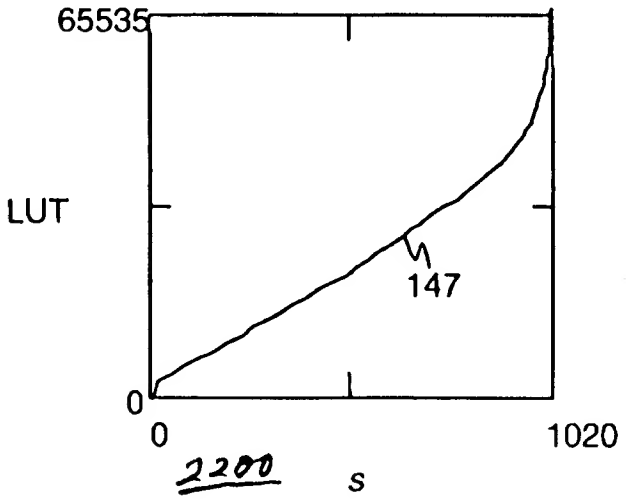
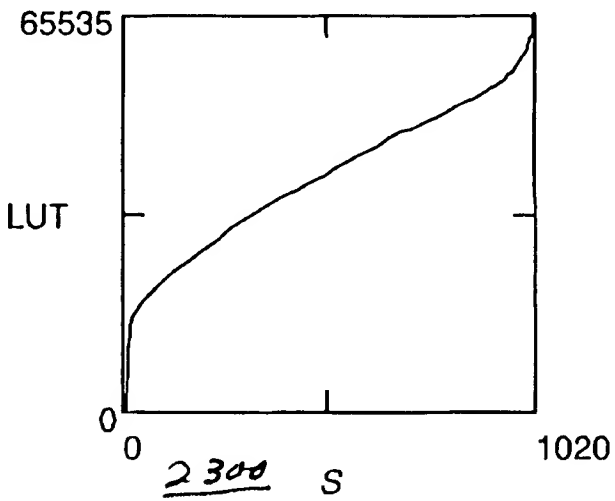


22

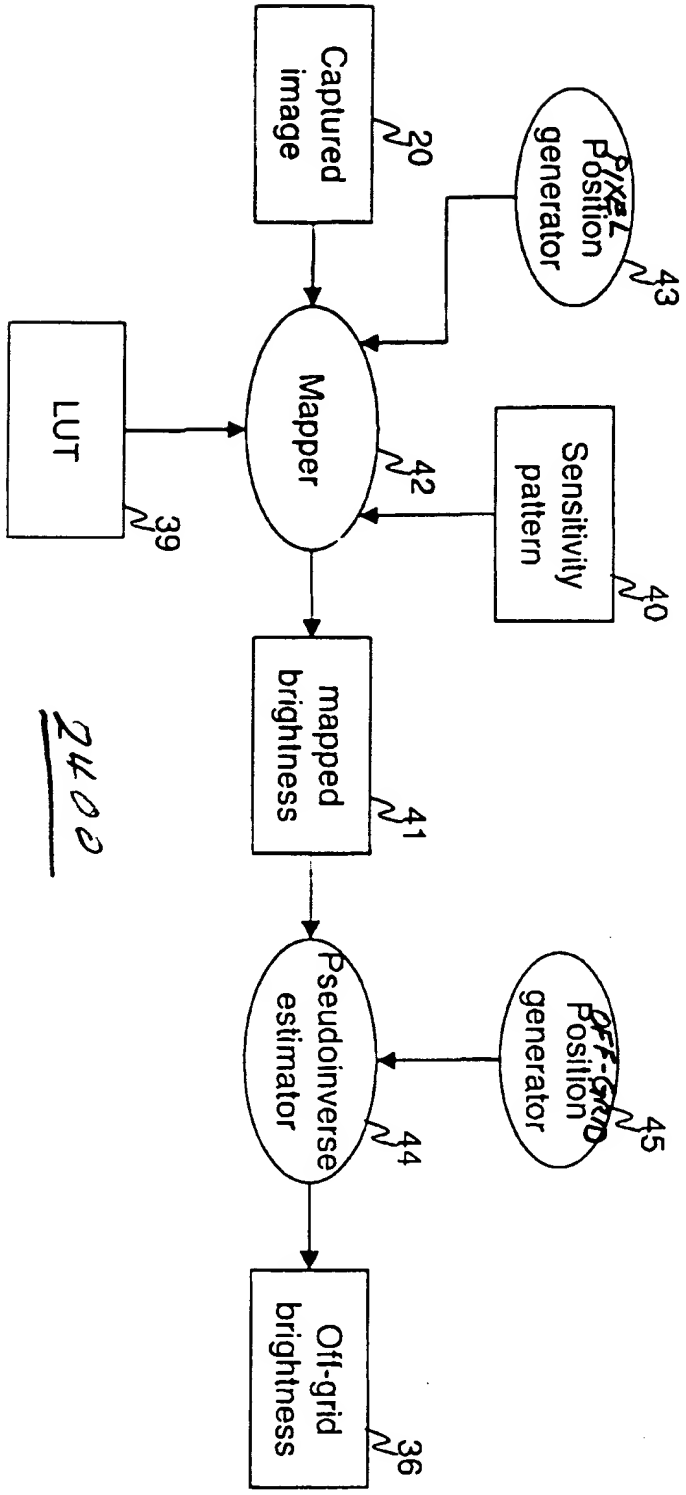
FIG. ~~15~~



23

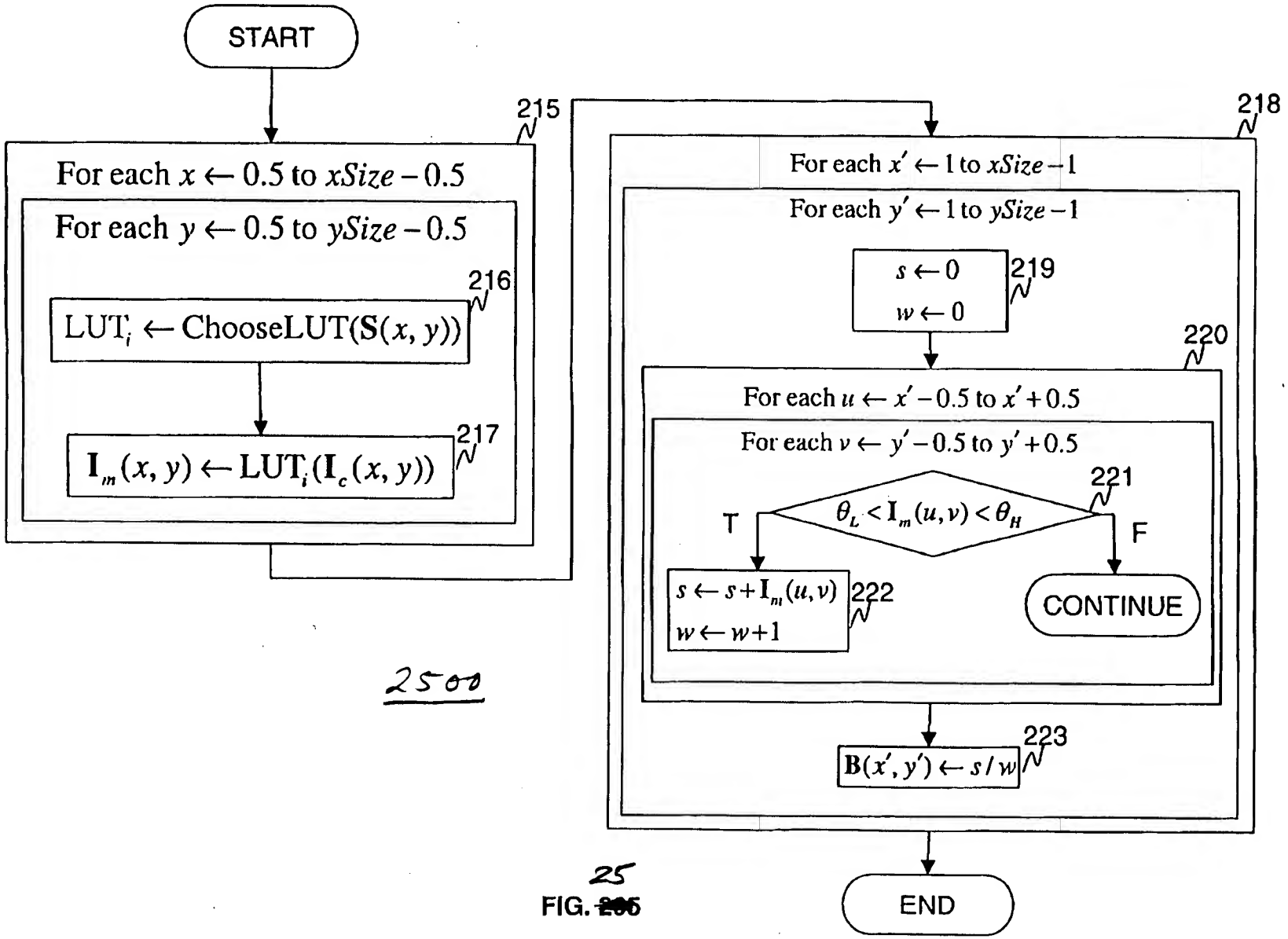
FIG. ~~16~~

09511460 .092300


Captured image
20
PIXEL Position generator
43
Mapper
42
LUT
39
Sensitivity pattern
40
mapped brightness
41
Pseudoinverse estimator
44
OFF-GRID Position generator
45
Off-grid brightness
36

2400

FIG. 24



2500

25

FIG. ~~2B~~

99-10-29 14:49 :(株)ソニー知財部 # 53
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09611460 .022300

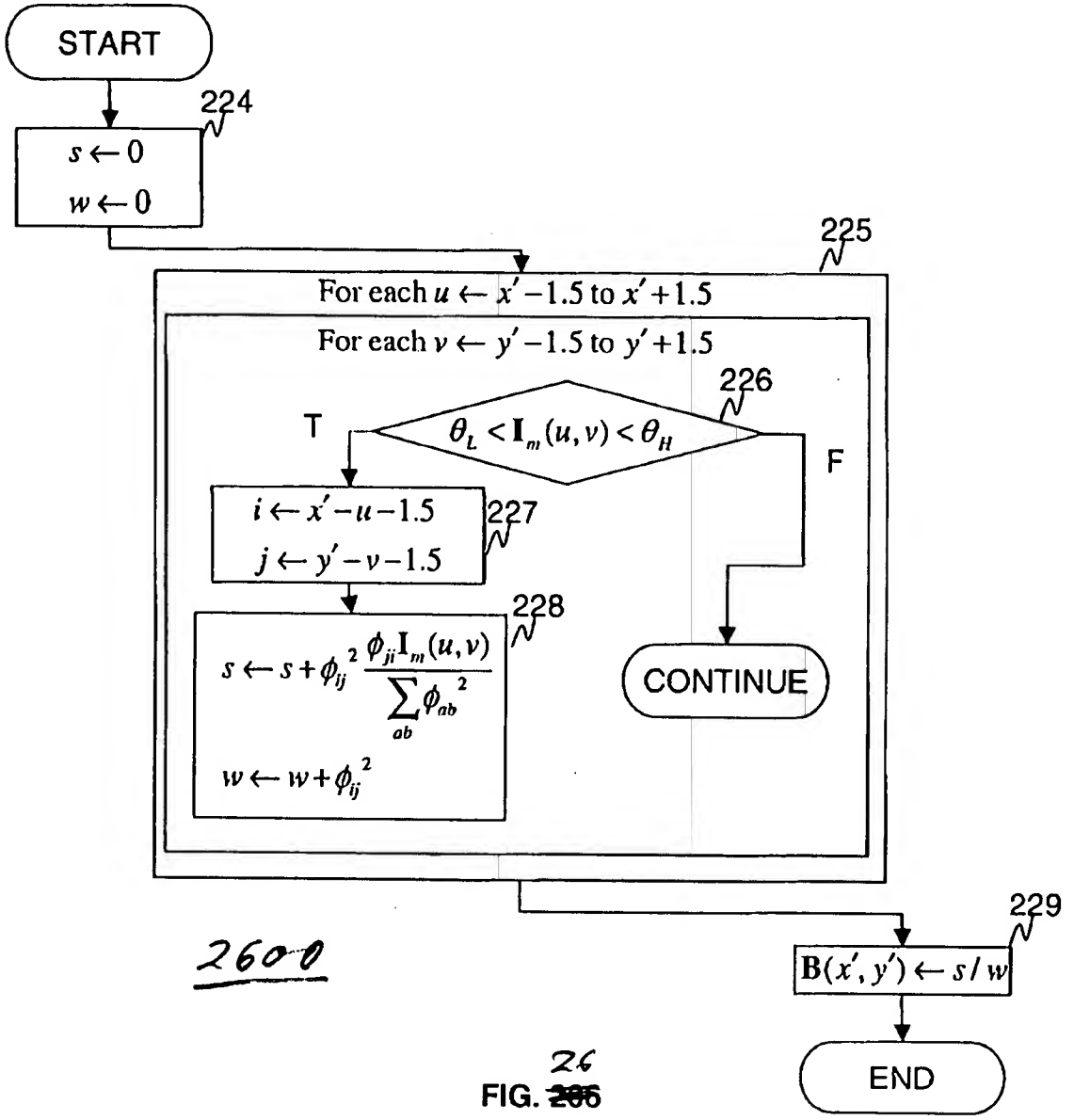

FIG. 26

09514469 .022300

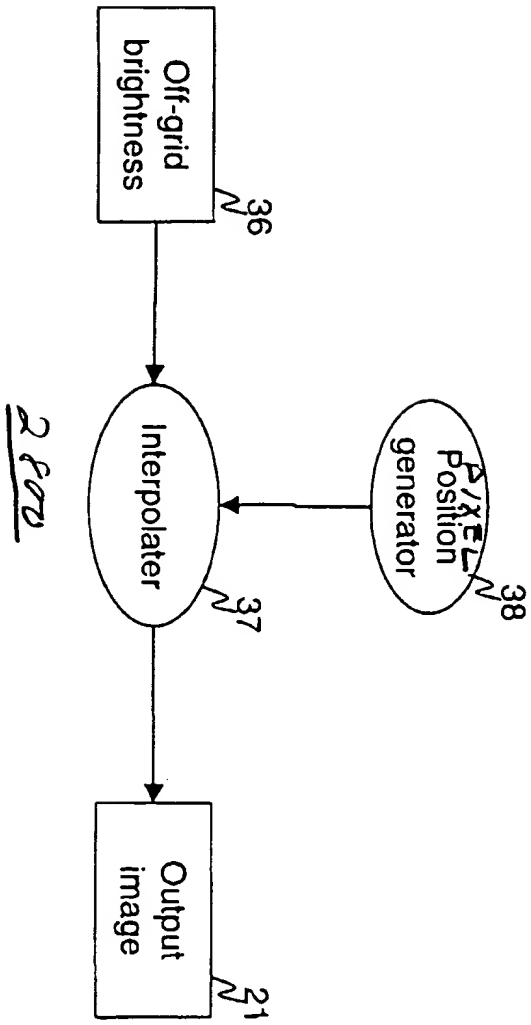
Off-grid brightness
36
Interpolater
37
Pixel Position generator
38
Output image
21

FIG. 5

:0354486806 # 50
99-10-29 14:49 :(株)ソニー特許所
0354486806 PAGE.50
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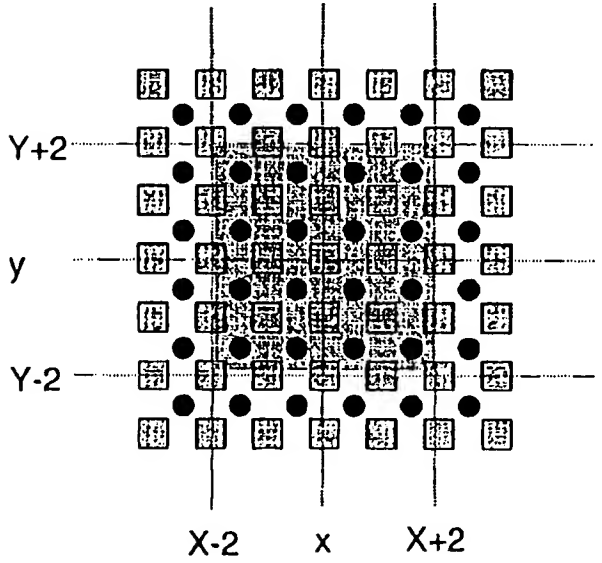
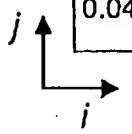


2900

FIG. 29

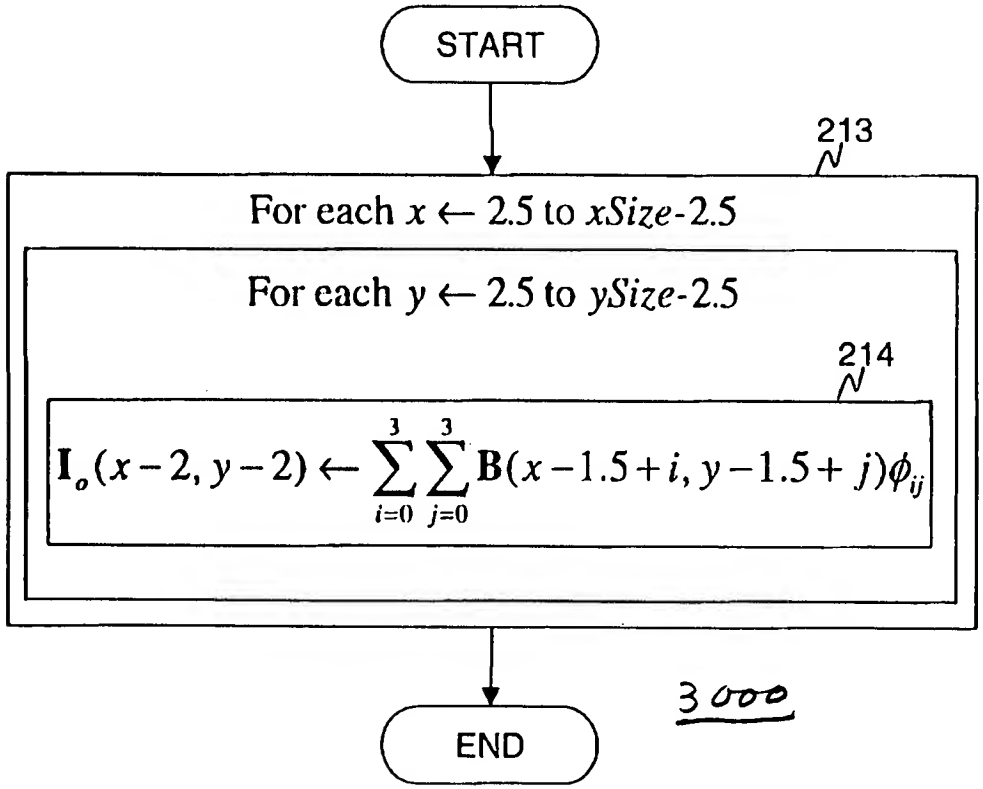
0.043	-0.661	-0.661	0.043
-0.661	10.28	10.28	-0.661
-0.661	10.28	10.28	-0.661
0.043	-0.661	-0.661	0.043



2700

FIG. 27

09514469.022300



30

FIG. ~~204~~

09514469_022300

99-10-29 14:49 (株)ソニー知財所 :0354486606 # 51
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:0354486806
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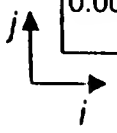
0.0043	0.0100	0.0100	0.0043
0.0100	0.2296	0.2296	0.0100
0.0100	0.2296	0.2296	0.0100
0.0043	0.0100	0.0100	0.0043



3100

31

FIG. ~~104~~

0.5	0.5
0.5	0.5

3200

32

FIG. ~~105~~

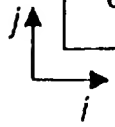
0.0037	0.0101	0.0166	0.0166	0.0101	0.0037
0.0101	0.0275	0.0452	0.0452	0.0275	0.0101
0.0166	0.0452	0.0743	0.0743	0.0452	0.0166
0.0166	0.0452	0.0743	0.0743	0.0452	0.0166
0.0101	0.0275	0.0452	0.0452	0.0275	0.0101
0.0037	0.0101	0.0166	0.0166	0.0101	0.0037

3300

33

FIG. ~~106~~

0	1
0	0



3400

34

FIG. ~~107~~

09511469 .022300

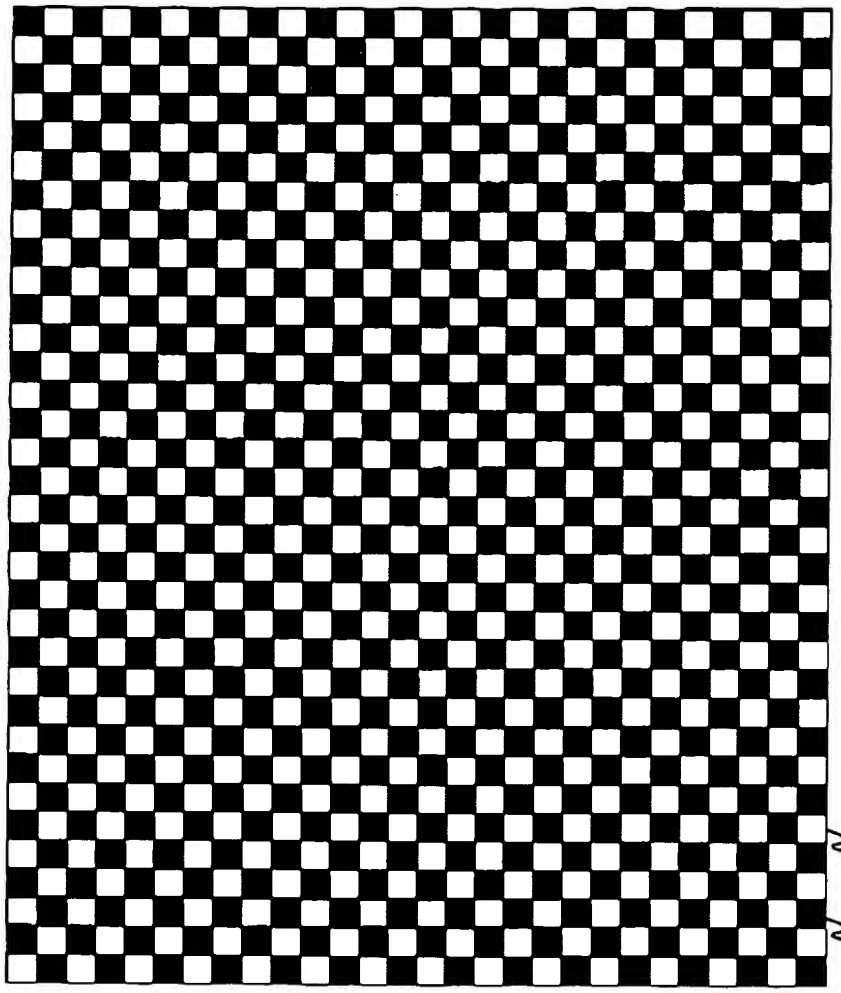


FIG. 55

0354486806 09/29/99

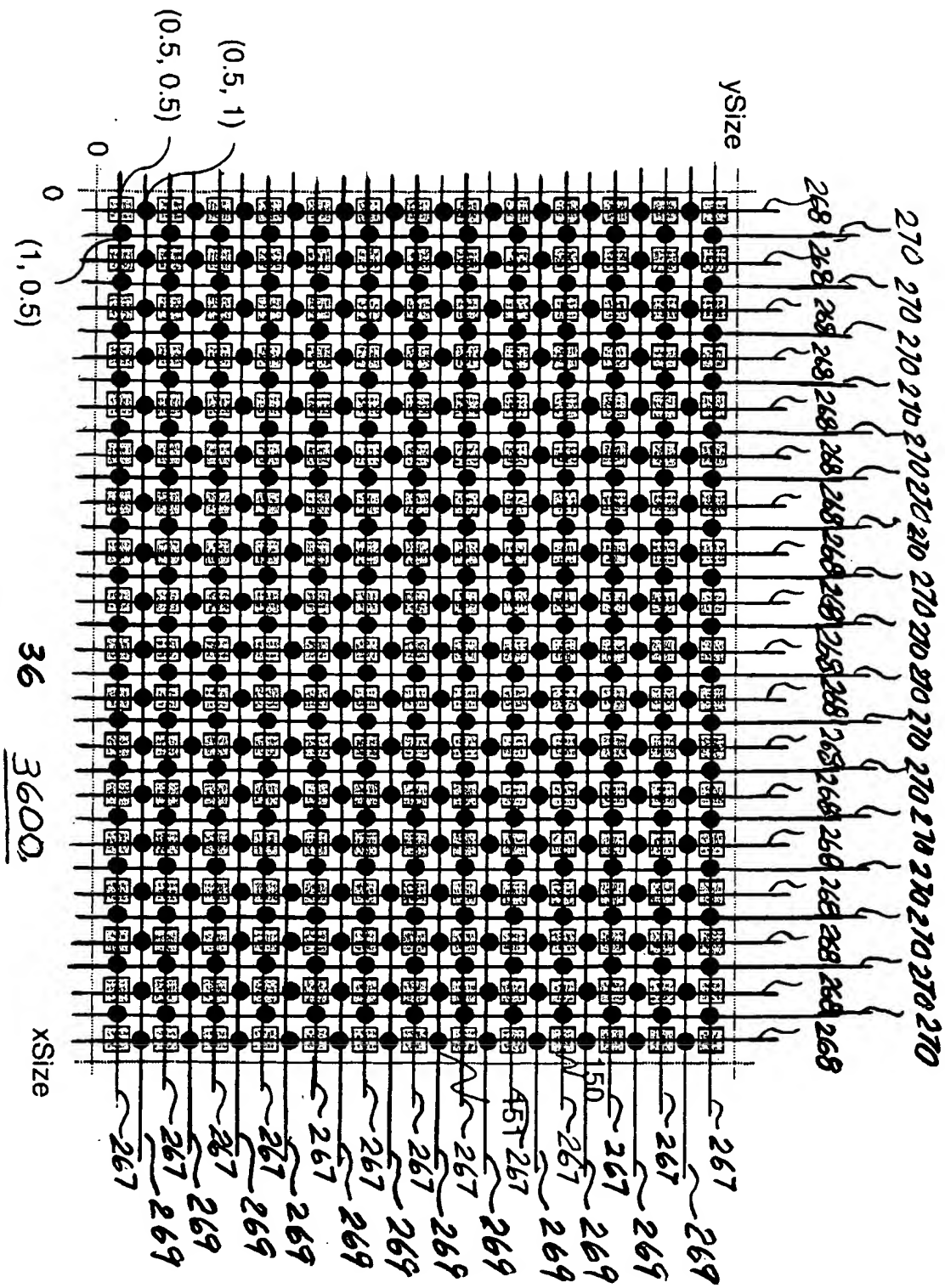


FIG. 1

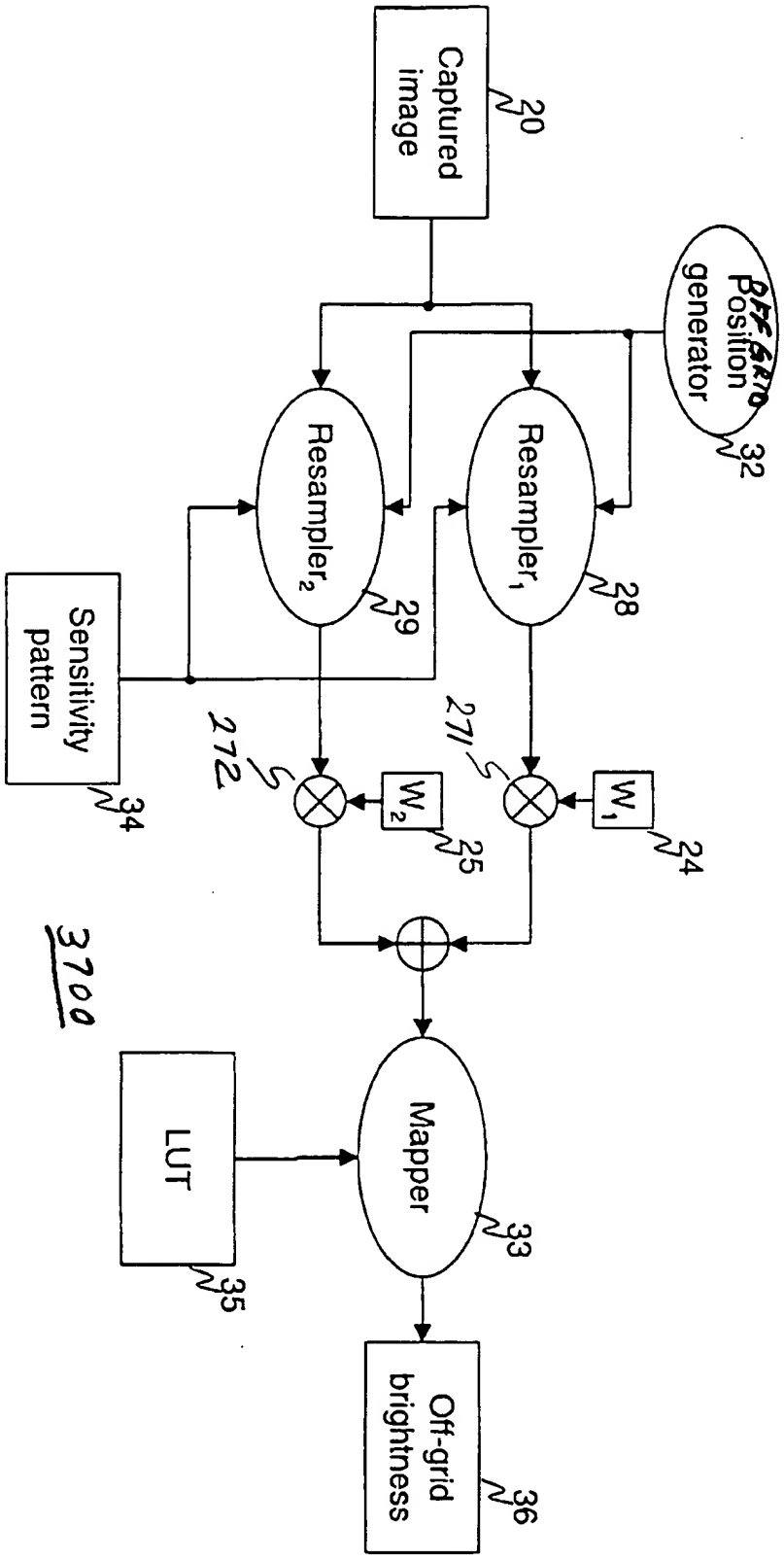

Captured image
20
Position generator
32
Resampler$_1$
28
Resampler$_2$
29
Sensitivity pattern
34
271
272
W_1
24
W_2
25
3700
Mapper
33
LUT
35
Off-grid brightness
36

FIG. 37

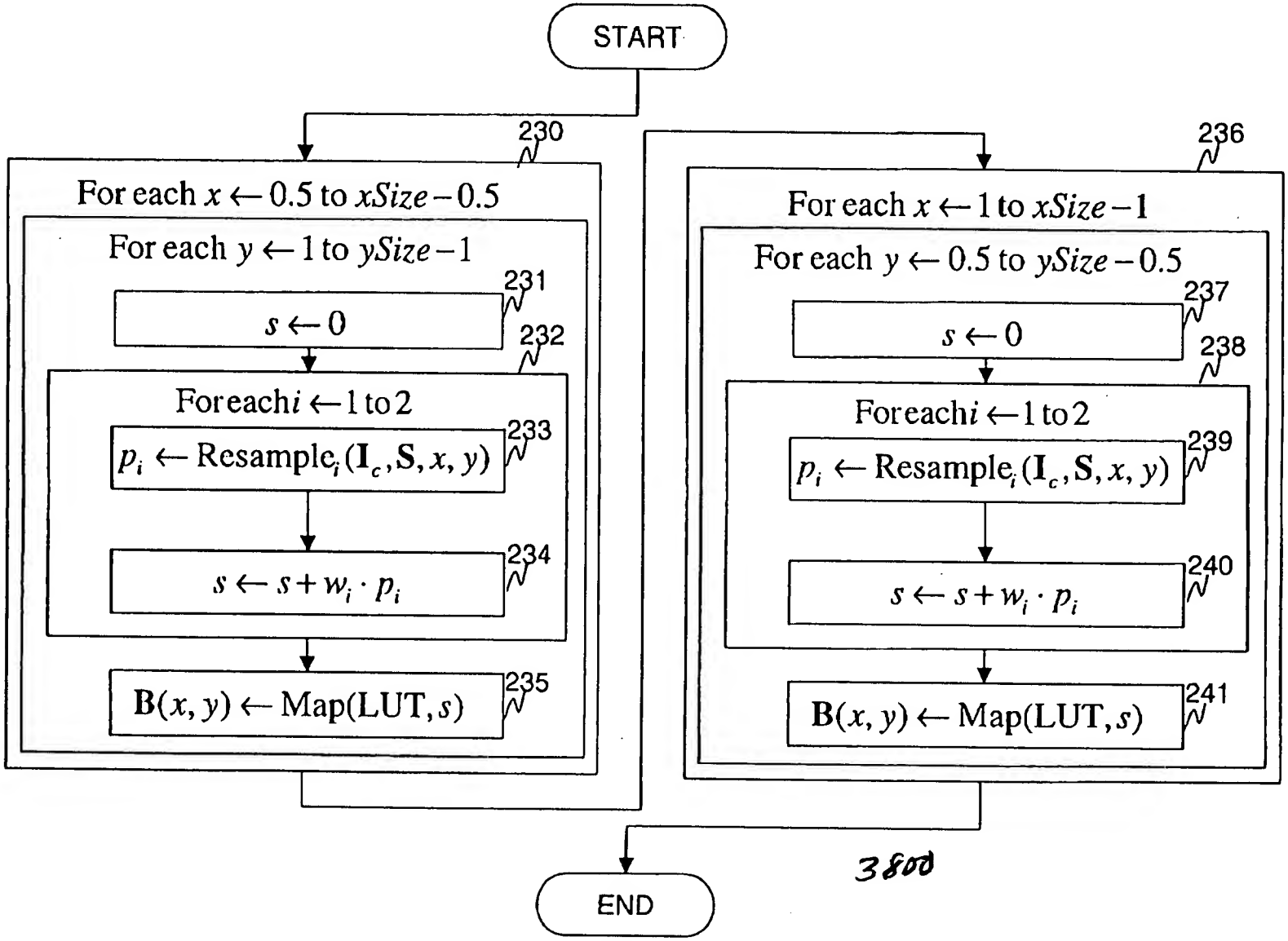


FIG. 38

56
:0354486606
99-10-29: 4:49 : (株)ソニー不服2000
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0354486606
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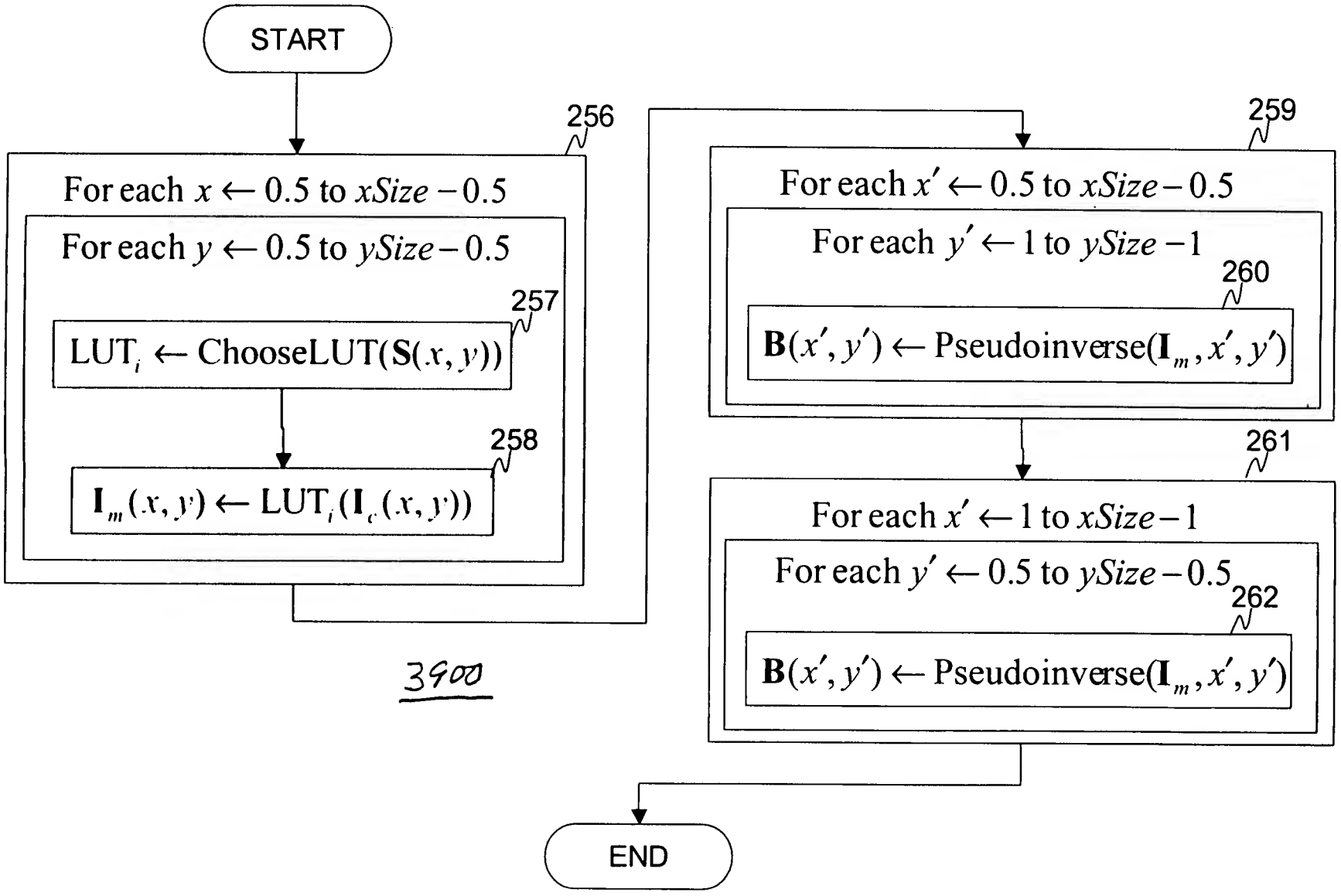
09511469 .082300



3900

3900

FIG. [redacted]

09511469 .022300

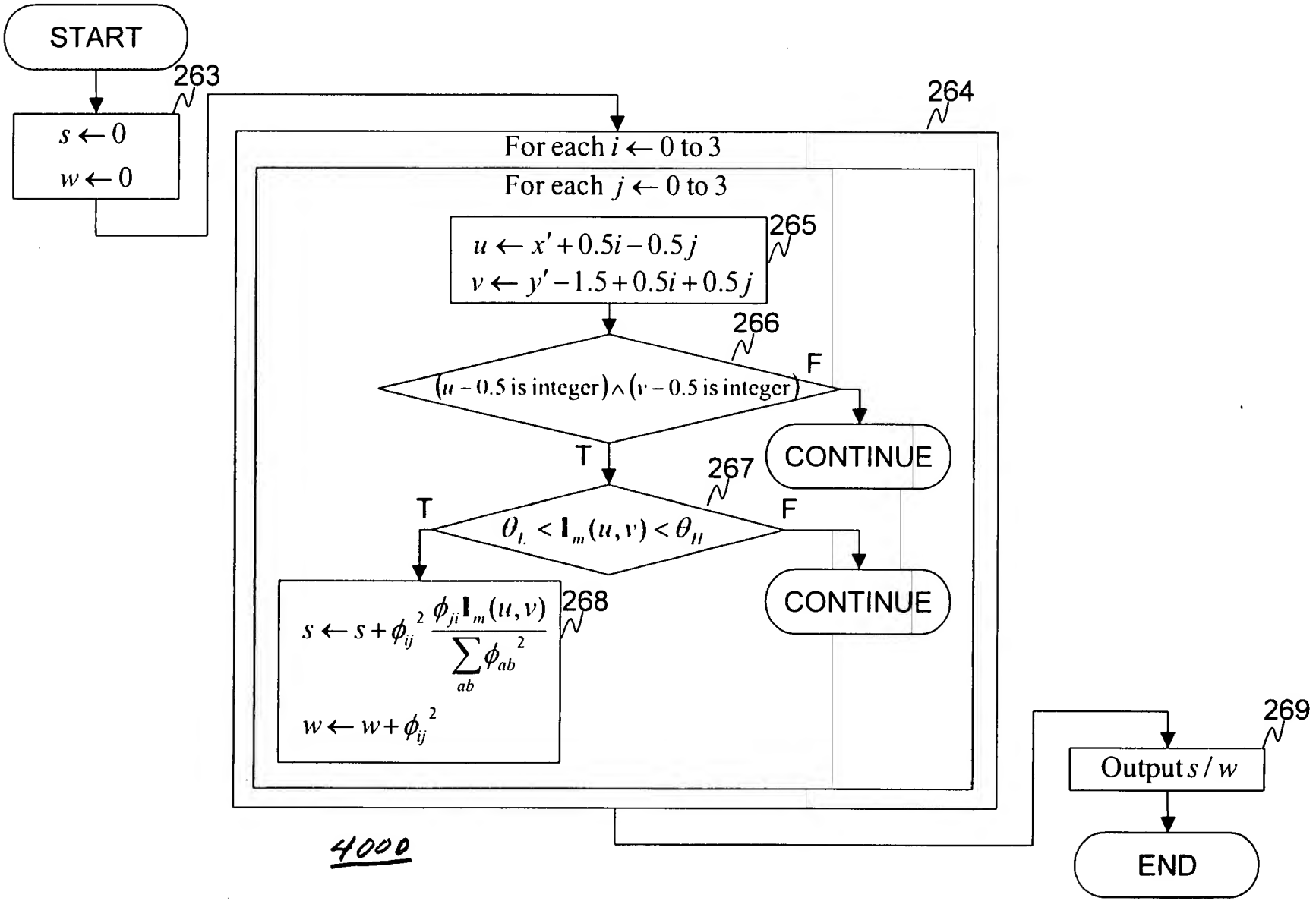


FIG. 40

09511469 .022300

:0354486606 # 39
99-10-29 14:45 :(株)ソニー特許所
0354486806 PAGE.59
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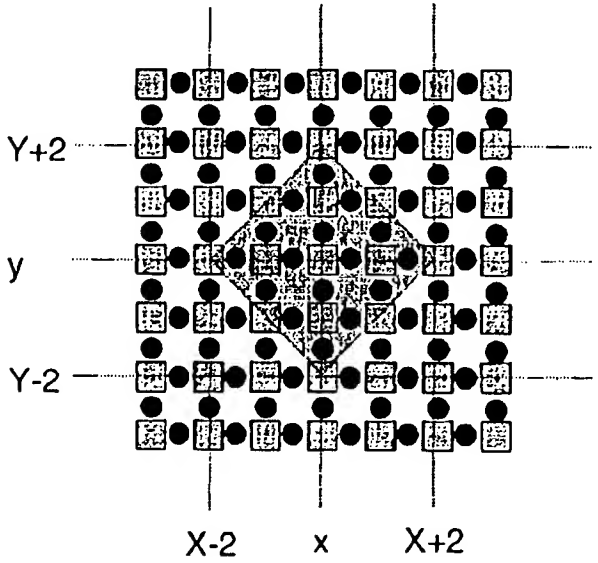
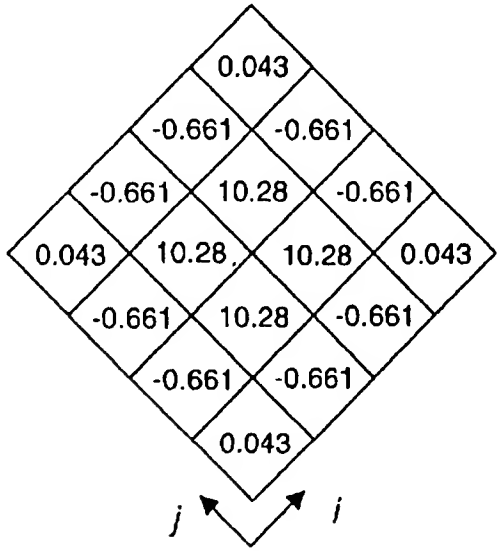


4100

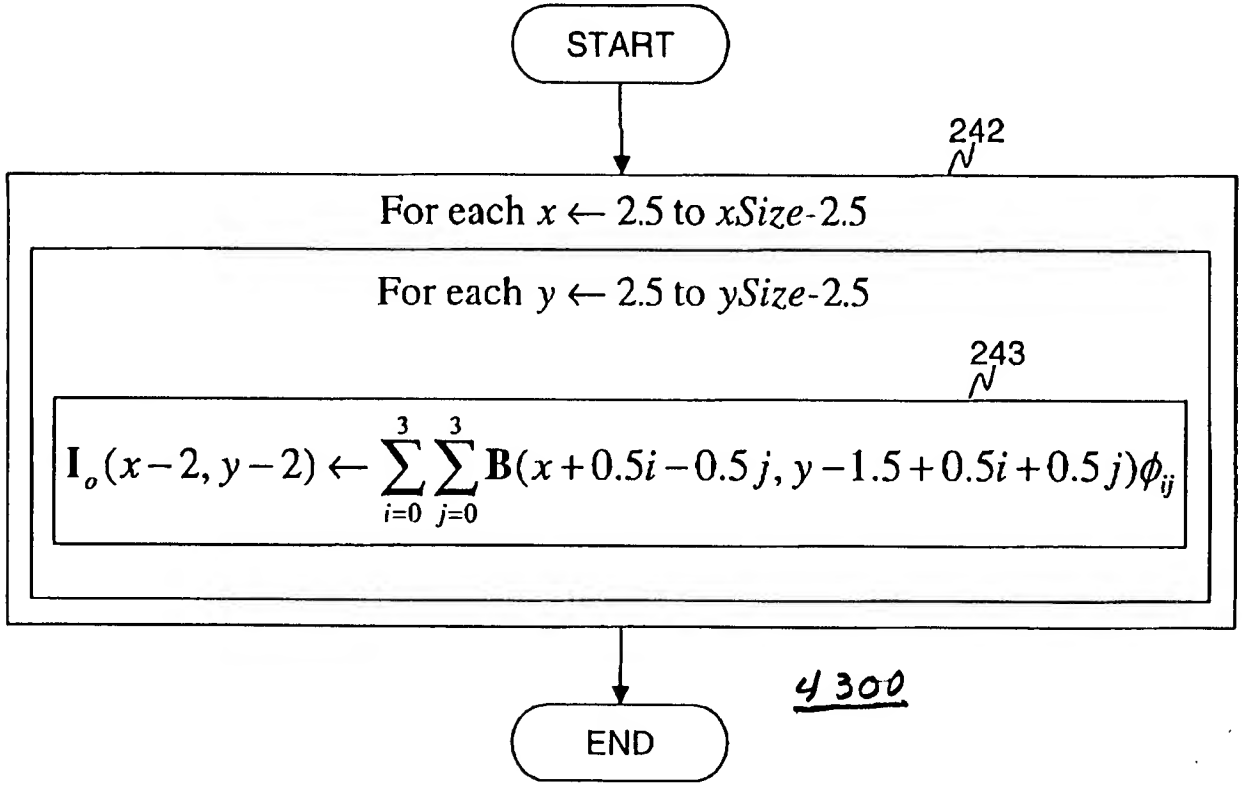
FIG. 41



4200

FIG. 42

09611460.022300



4300

43

FIG. ~~2B~~

09611469 .022300

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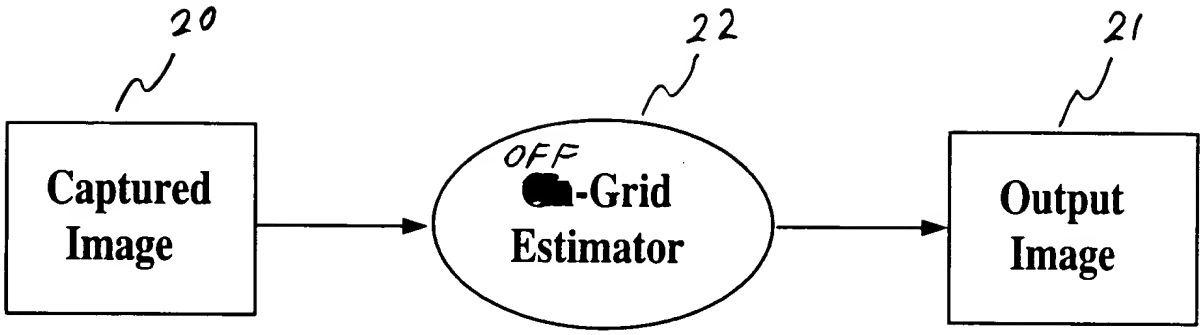

Figure 44

99-10-29 14:49 :(株)ソニー知財研所 # 61
:0354486606
0354486806 PAGE.61
OCT 29 1999 02:05

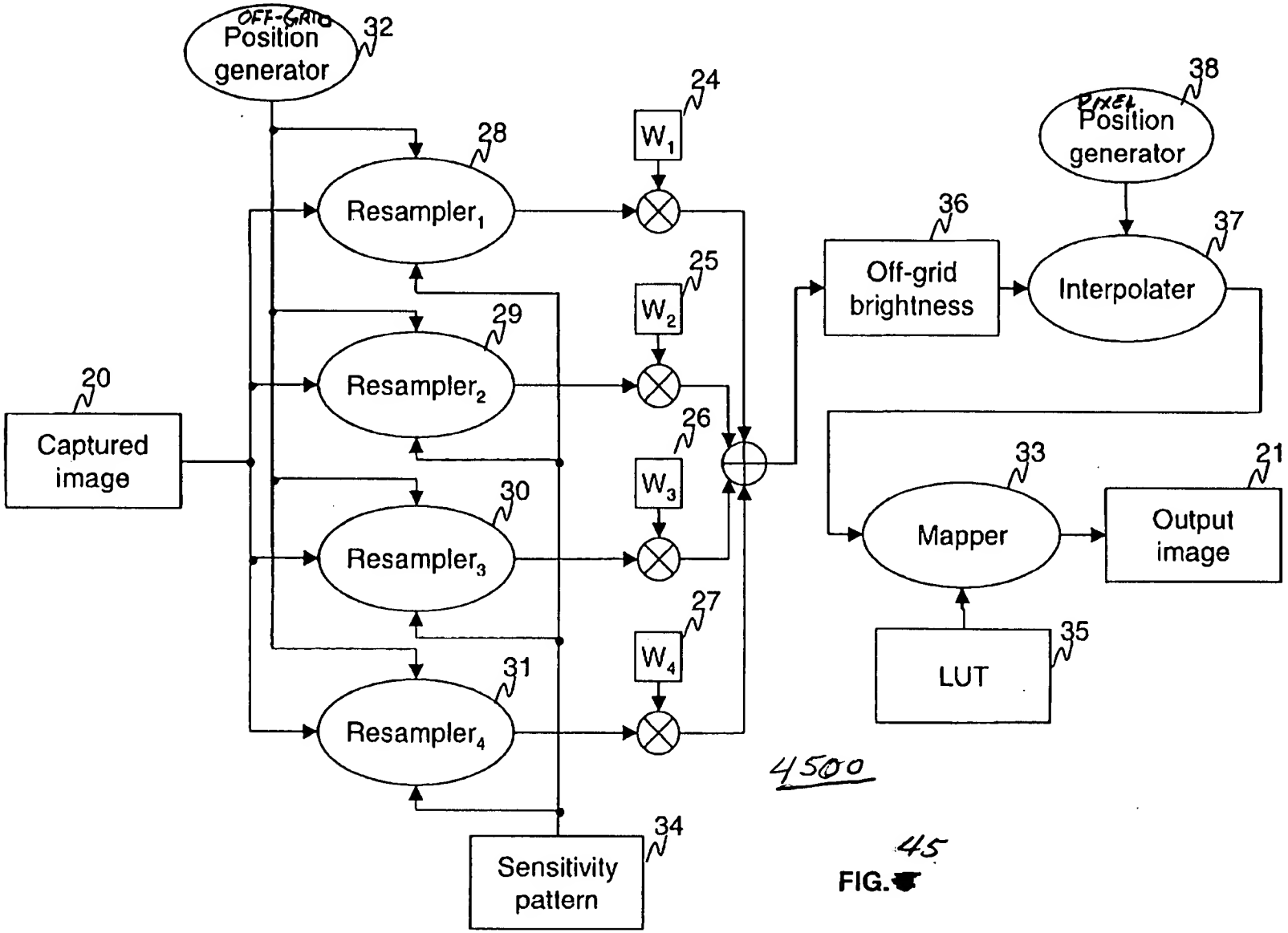

FIG.

09511469.022300

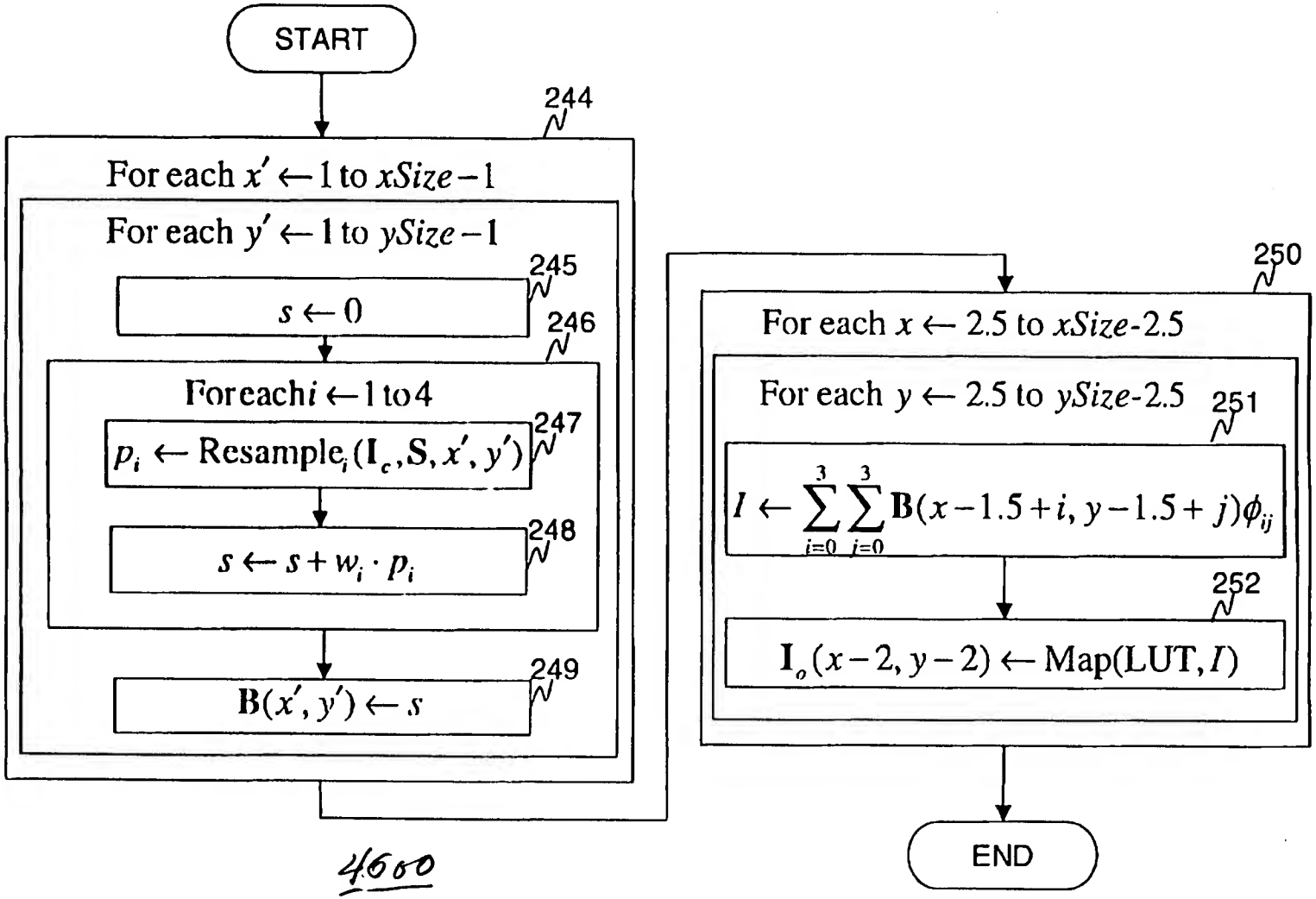

FIG. 2~~8~~

09511469 .022300
99-10-29 14:49 :(株)ソニー特許部 # 62
:0354486806
0354486806 PAGE.62
OCT 29 1999 02:05

:0354486606 # 63

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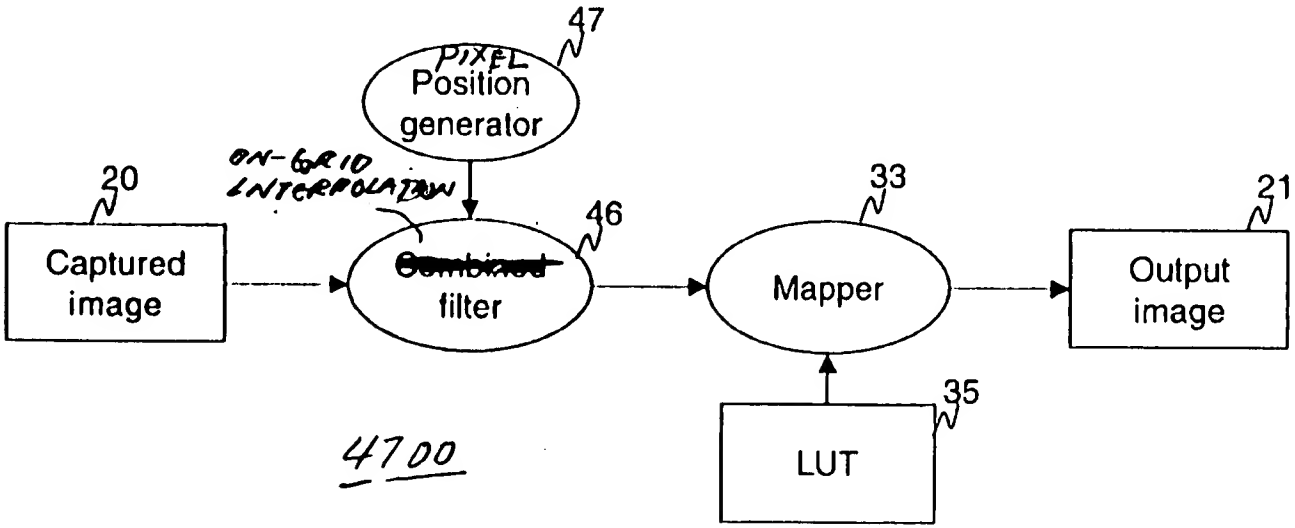
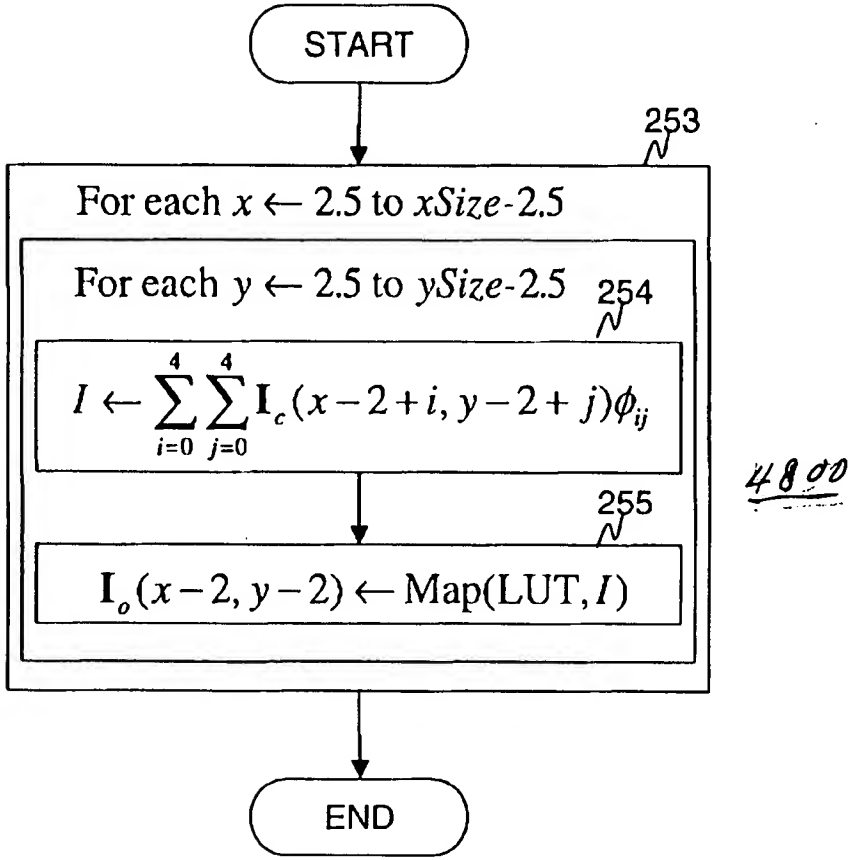
99-10-29 4:49 :(株)ソニー知財部

OCT 29 1999 02:05



47
FIG. 3

09511469 .022300



4800

48

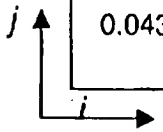
FIG. 2[illegible]

99-10-29 14:49 (株)ソニー特許所 # 65
:0354486606
0354486606 PAGE.65
OCT 29 1999 02:05
09511460-082300

99-10-29; 4:49 ; (株)ソニー知財研所 ; 03544666606 # 64

03544666806 PAGE.64

0.043	-0.618	-1.322	-0.618	0.043
-0.618	9.001	19.238	9.001	-0.618
-1.322	19.238	41.12	19.238	-1.322
-0.618	9.001	19.238	9.001	-0.618
0.043	-0.618	-1.322	-0.618	0.043



4500

49

FIG. ~~16~~

OCT 29 1999 02:05

09511469 .092300

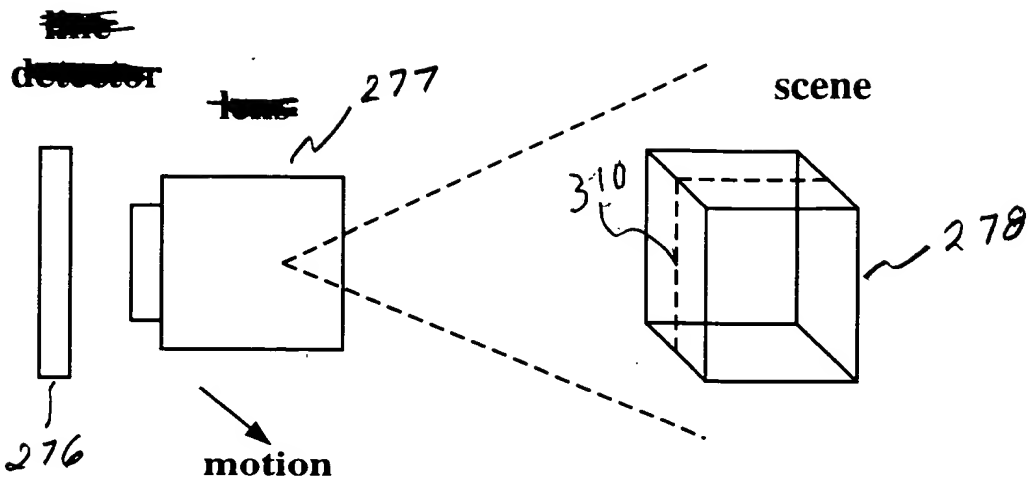


Figure 50

SCANNED 2

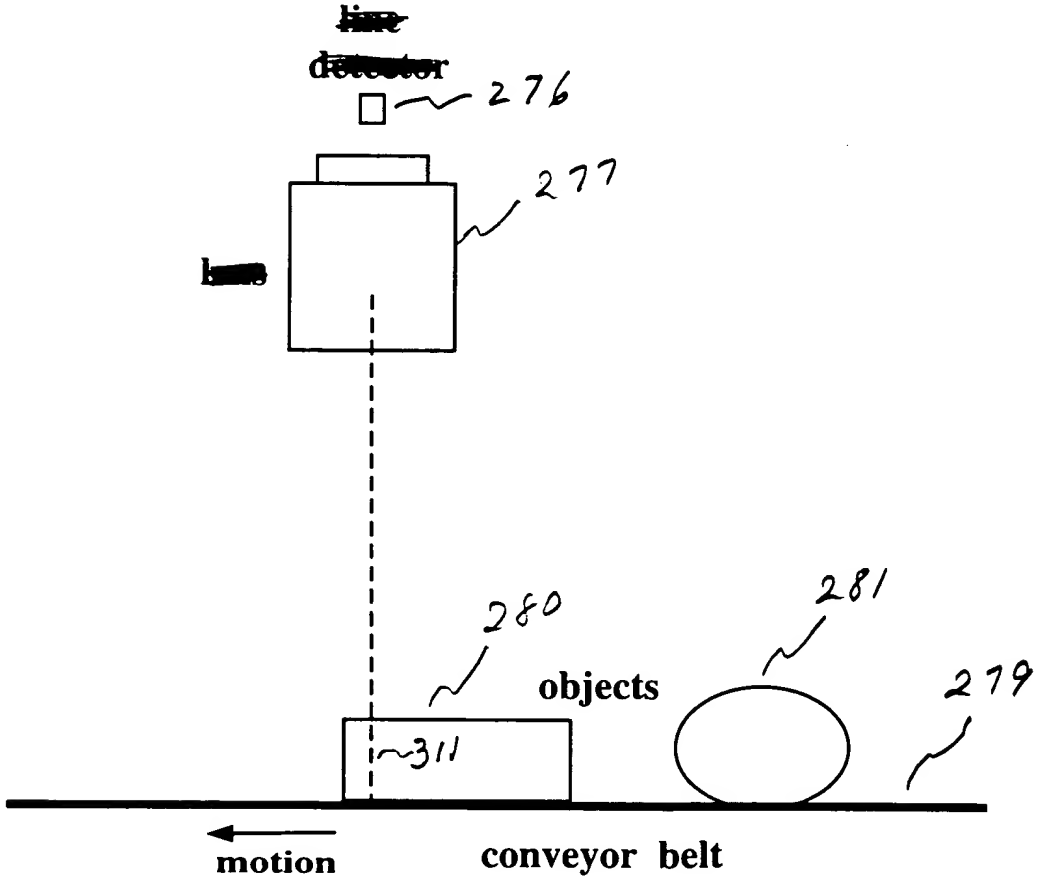


Figure 51

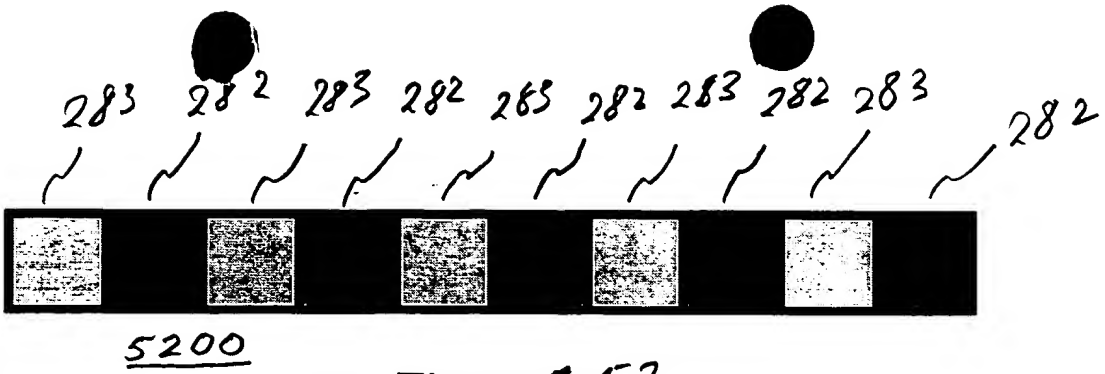


Figure 52

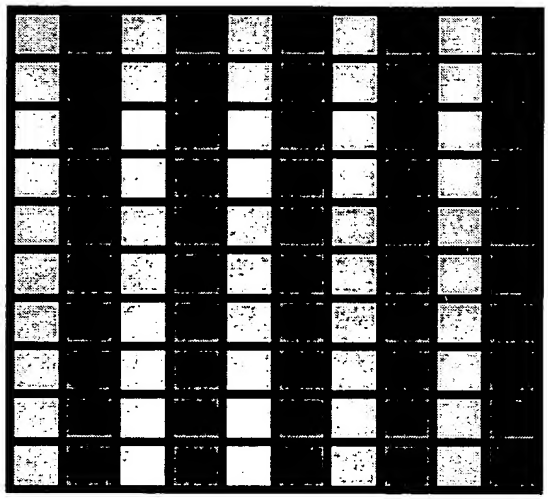


Figure 53

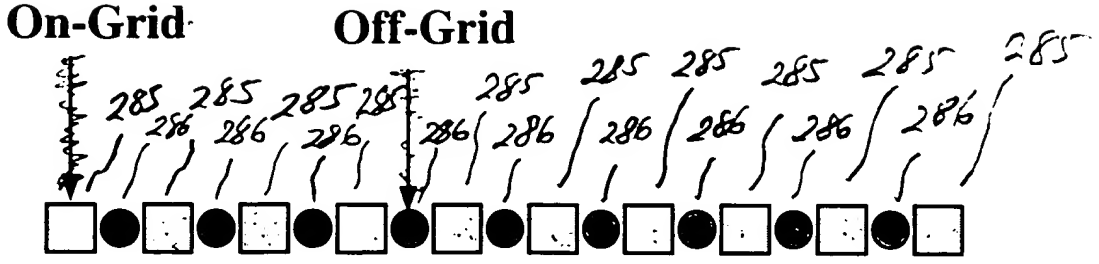


Figure 54

SCANNED 2

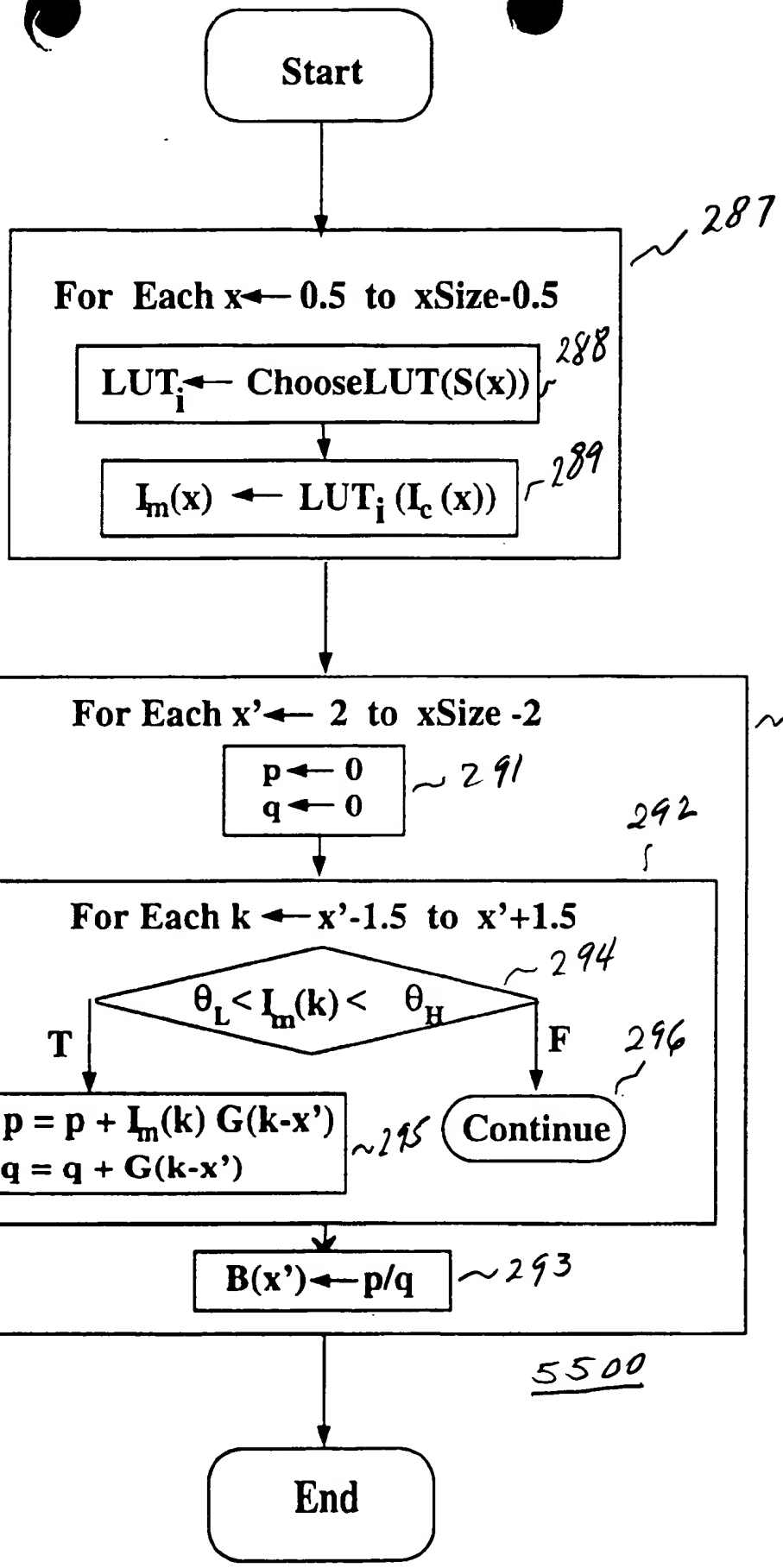


Fig 55

SCANNED

1.0	7.7	7.7	1.0

5600

Fig. 56

[redacted]

SCANNED

0.1	3.6	10.0	3.6	0.1

6100

Fig 61

[redacted]

-0.96	13.44	13.44	-0.96

5800

Fig 58

~~Figure 10: 1st Cubic Interpolation Kernel $\psi(k)$ (for on-grid from off-grid)~~

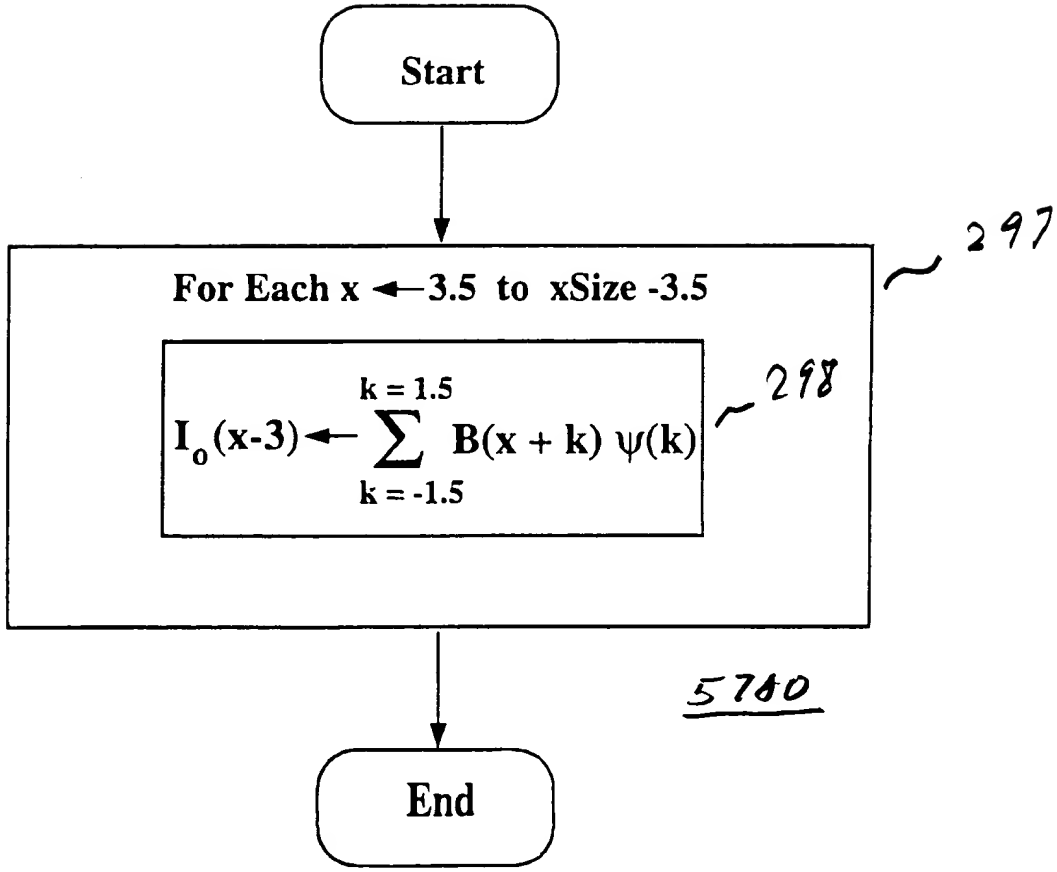


Fig 57

~~Figure 11: On-Grid Estimates from Off-Grid Estimates~~

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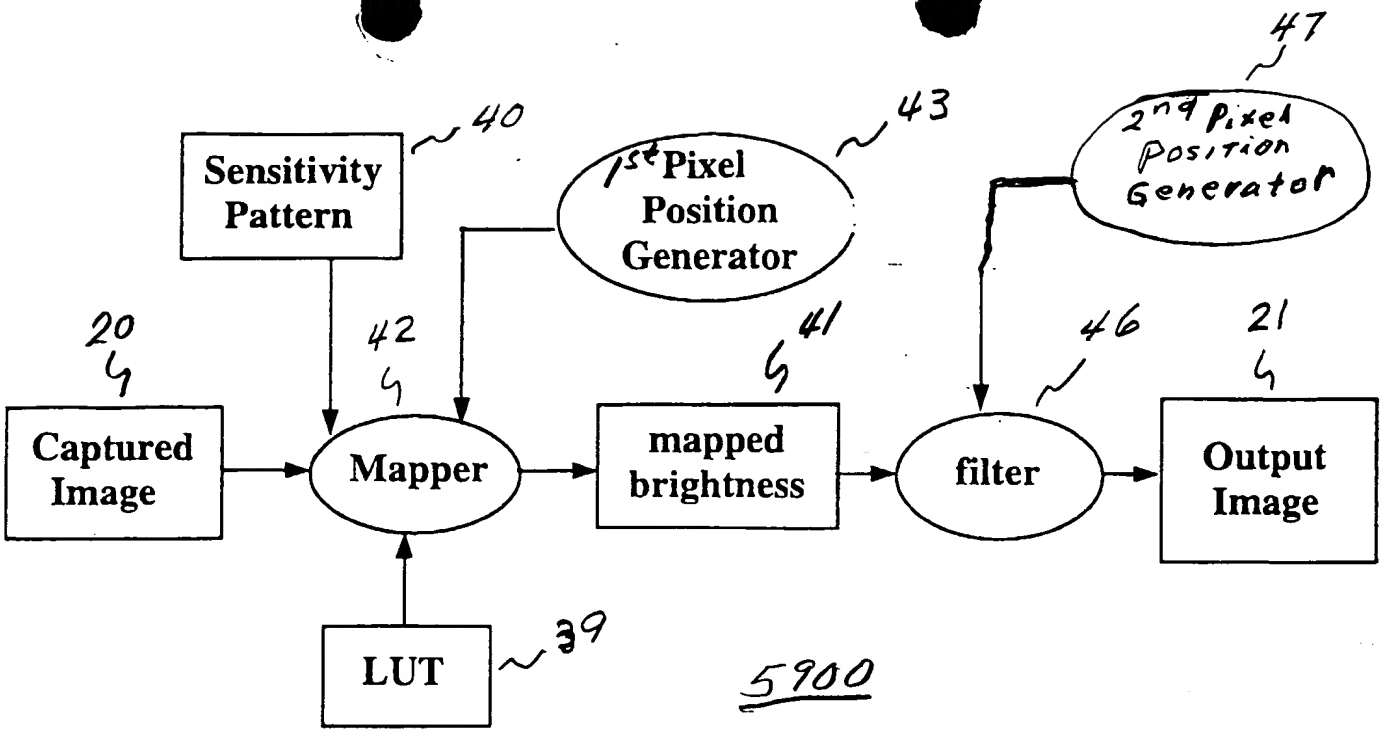

Fig 59

~~Figure Data Flow Diagram~~

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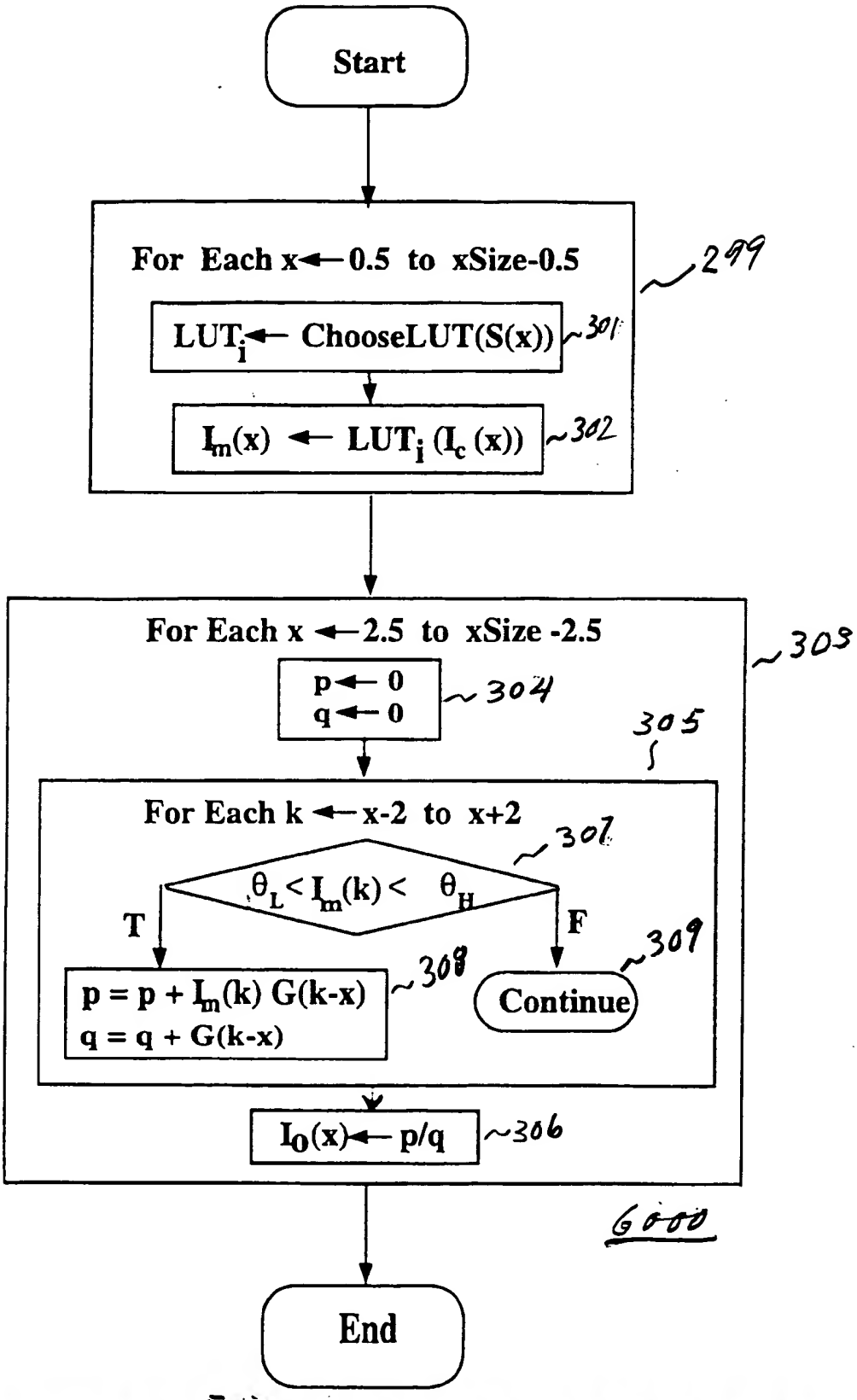

Fig 6D

~~Figure 5A On Grid Flow Chart (Using 5x1 Gaussian Kernel in Fig. 8)~~